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VOL. II.—4TH YEAR—No. 25.

SYDNEY: SATURDAY, DECEMBER 22, 1917.

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THE MEDICAL JOURNAL OF AUSTRALIA.

VOL. II.—4TH YEAR.

SYDNEY: SATURDAY, DECEMBER 22, 1917.

No. 25.

An Address.¹

By W. N. Robertson, M.B., M.S., Edin.,
Retiring President, Queensland Branch of the British Medical Association.

It is again my proud privilege to thank you for the honour you have conferred in electing me to preside over the deliberations of this Branch for another twelve months. How greatly I esteem this evidence of your confidence I can hardly say. I feel that it is more due to my long devotion to the interests of the Branch than to any ability I have shown as President. I have felt deeply during this period, my many shortcomings in the performance of my duties, and I can only proffer my heartfelt thanks for your patience and forbearance.

Especially, have I been lax in enforcing the ordinary rules of debate, but many difficult questions have been dealt with which seemed most easily discussed in a kind of conversational manner, that possibly members were indulged in this respect.

We have to mourn the loss of two of our members, Drs. Henderson and Harding. Captain Henderson died of wounds received in the service of his country, tending the wounded on the field of battle. He has joined that glorious army of noble souls who have laid down their lives that others may live. That our Branch has not been slow to respond to the call of Empire is proved by the fact that we have 61 members still at the front, whilst 12 have returned after varying periods of service, and some half dozen are on active service at home in Queensland. This represents over 27% of the total number on our roll. If the rest of the community showed a similar estimate of patriotic duty, there would be no need for a conscription referendum.

The continued absence of so many of our most active members overseas, has had a marked influence upon the attendance at the meetings and also on the amount of scientific material offered for discussion. I think it is incumbent upon those of us who remain, to keep the flag flying, so to speak, and see that the men who are away, may not be ashamed of the activities of their Branch.

In this connexion I would appeal to members to endeavour to read papers or to show cases which might be the basis of profitable discussion. At nearly every Council meeting during the past year, the problem of finding material for the Branch meeting has been a worry, and it is not fair to our Honorary Secretary, who has enough to do in all conscience, that he constantly should have to importune men to fill the gap. Everyone is unusually busy as the result of the local shortage of men, but we cannot expect our meetings to be useful or our Journal readable, unless members will share their garnered wisdom with us.

Short papers on subjects of general interest are best. They encourage general discussion. I am sorry that the clinical evenings at the General and Children's Hospitals, have been abandoned, but the staffs, who were responsible for providing the material, were discouraged by the apathy of the members. There is abundance of material running to waste in our public hospitals which might provide valuable object lessons to us all, and I hope the incoming Council will bear this in mind during the new year before us.

Legislative Matters.

During the past year the Branch may be said to have fallen into conflict with the powers that be in several matters.

It was found that the working of the State Insurance Act was unsatisfactory from the medical point of view, and after some negotiations with the Commissioner, certain of the anomalies were amended, but I am afraid some of our members are still dissatisfied. There was a degree of "give and take" on both sides and the Council felt that they had done the best they could in the circumstances.

At the end of last year it was decided to demand a guinea for all life assurance examinations, and your delegates to the Federal Committee secured the passage of a resolution recommending a similar stand to all the States. This has met with considerable opposition from some of the Companies, but it is certain that our claim can be maintained, if only our members stick to one another in this matter. It is not right that a report on a life should be given, unless a thorough examination is made, and such examination is surely worth a guinea, not only for the trouble entailed, but on account of the responsibility involved.

We have had meetings and discussions *ad nauseam* over the Opticians Bill, and have proved that politicians flout expert advice, and subordinate the public weal to their own ignorant prejudices. I really did hope that the present Government, which declaims so loudly its enthusiasm for the welfare of the masses, would have hesitated to endorse with the Government stamp the pretensions of men who have not had the scientific training required to appreciate the presence of disease in the eye. The poor public are again the sufferers.

Country Hospitals.

The unsatisfactory conditions of service in country hospitals, especially in the north and west, and the constant complaints from men who had found their positions intolerable, led the Council to appoint a Sub-committee to obtain information about all these hospitals and to draft a model agreement for medical officers at hospitals on the lines of the Model Lodge Agreement. It is hoped that when this is done, members who contemplate applying for such appointments, will first communicate with the office of

¹ Delivered at the Annual Meeting of the Queensland Branch of the British Medical Association, on December 7, 1917.

the Branch, when we hope to supply up-to-date information about the particular place and also to provide the applicant with a copy of this agreement, which will be designed to protect his interests. It is also hoped that men holding such appointments will provide the office with information from time to time, so that our records may be up to date. In this way we hope to see the lot of the men who go into the back blocks, materially improved, and solid protection afforded them against the extortions of conscienceless hospital committees.

The Activities of the Branch.

A Sub-committee was appointed to draft new Rules for the Branch, and to-night you will have an opportunity of discussing them. The most important alterations suggested have referred to advertising. These Rules have been largely based upon the Rules of the New South Wales Branch. It has long been felt that we in Queensland have been too lax in this direction, and that too much advertising in the daily press was hardly consonant with the dignity of a learned profession. The best advertiser is the satisfied patient, who is the product of the excellence of our work. May I suggest here, that the standard of our work is definitely raised by the preparation of papers, and participation in the discussions held in this room. A blend of the accumulated knowledge of our more experienced elders with the possibly more exact methods of our more recently qualified juniors, should widen the point of view and increase the knowledge of us all. It has been suggested that it would be well for the new Council to consider the advisability of the formation of a Sub-committee to draw up a programme of subjects for discussion throughout the year. This is a difficult matter, as men are more ready to read papers upon subjects in which they happen to be immediately interested, but if a few subjects of wide general interest were chosen, and the discussion opened by one or two members, much good work might be done and valuable information disseminated. Certain diseases of seasonal incidence might well be taken in hand, and their onset might even be anticipated.

It should be possible to secure co-operation between the collective wisdom of this Branch and the Government or the Department of Public Health to combat the epidemic diseases, such as gastro-enteritis in babies, diphtheria, enteric fever, etc. Unfortunately the Government seem to be too busily engaged in carrying out its own hobbies, to trouble much about the more important subject of the public health. I fear it is but a dream to think of a time when we may have a Ministry of Public Health under the guidance of a medical man as Minister. This might have its disadvantages, also, but on the whole, I think it would be productive of more sane attempts to grapple with the medical problems affecting the welfare of the community.

There has been much talk in various quarters about the possible introduction of a new Medical Act or an amendment of our present hoary-headed one, but unless some measure is introduced to curtail the activities of the host of quacks who batten upon the

public, stealing their money, and what is more serious, their lives and health, the amendment would be useless. The Medical Board should also have plenary powers to enable it to remove from the Register names of men who grossly transgress against the vows they took on graduation.

The Medical Journal of Australia.

Since many of our members have gone overseas in the service of their country, the Branch has endeavoured to keep them supplied with copies of *The Medical Journal of Australia*, but this has been a fairly severe drain upon the finances of the Branch, and it has been suggested that the need would be met, if a member at home would post his copy to a member at the front, whose name and address would be given him, or would post it to this office so that sufficient journals would be available to keep the overseas men in touch with our doings at home. It is little enough to do for those men who have made such noble sacrifices for us.

As a Director of *The Medical Journal of Australia*, I would regret to see the income of the paper cut down by this amount, but I understand that Queensland is the only, or almost the only, State to keep the subscriptions of its absent members going.

As the birth of *The Medical Journal of Australia* was practically coincident with the outbreak of war, I think we may congratulate the Editor and Manager of our paper upon the sturdy fight he has made to give us such a readable and successful Australian periodical. When the war is over and advertisers have again something to advertise, I have no doubt that the Journal will become a valuable financial asset of the Association.

Contract Practice.

During the year several discussions have taken place in the Council and the Branch over the question of an increase in lodge fees. Just as war broke out our new model Lodge Agreement was ready to be launched, and in what I now consider, an excess of patriotic fervour, it was decided that "for the present" the financial clauses of the Agreement should not be enforced. This was done, as it was thought that bad times for the working class were ahead of us. On the contrary it has been proved that never in the history of Australia, or perhaps of the world, has the working man had such a halcyon time. Wages have gone up by leaps and bounds, and money is abundantly squandered on luxury and amusement. The picture shows, theatres, stadium and racecourses are crowded, and poverty is practically unknown, except amongst the shiftless or dissipated. The working man who joins a lodge, is usually a more or less thrifty soul. The fact that he joins an organization for thrift of this class, proves it. He gets medical attendance and medicine for himself and family for something like 6d. a week. Another penny or two pence a week added to this would never be felt. By this slight addition to the remuneration of his medical attendant, he would secure more satisfied service, and the lodge doctor would be enabled more happily to face the ever-increasing burden of taxation and increased cost of

living. The increased cost of motor cars, petrol, and tyres, an absolute necessity now-a-days for the doctor, is in itself sufficient justification for asking increased emolument.

I think the time is ripe for reconsideration of the whole question of contract medical practice. In my early days I had considerable experience of lodge practice, and I liked it. The majority of my patients were reasonable in their demands, but in every lodge, there is a number of individuals who make a hobby of taking medicine and pester the doctor continually, with the result that the more reasonable members occasionally suffer by a delay in response to their calls.

To my mind the fairest method would be: (1) a small retaining fee, with (2) a small fee for each consultation and a larger one for each visit. The attendant could send in an itemized account at the end of the each month or quarter to the Lodge Secretary and the lodge would be responsible for the amount. This would entail more clerical work which I know is a scourge, but it would eliminate unnecessary consultations and visits, and tend to greater harmony in the relations of doctor and patient. As, happily, I no longer seek lodge practice, I offer this suggestion for what it is worth. I have no axe to grind.

May I add how foolish it is for the community to seek cheap medical advice? It is liable to get its money's worth. If reasonable remuneration were offered the medical attendant, there would be less temptation on his part to swell his list beyond workable bounds, and the average of medical services would rise in quality. I would like to offer these suggestions for the consideration of the new Council.

The Re-establishment of Wounded Soldiers.

During the year the Medical Sub-Committee of the War Council, consisting of the Hon. Dr. W. F. Taylor, Dr. Halford and myself, have continued to give what assistance we could to the returned soldiers. Instead of meeting weekly, as we did at first, and reviewing every man who returned from the front, we deal only with those cases that are referred by the Council or Repatriation Sub-Committee. Our endeavour is to divert the energies of our maimed soldiers into channels of work suited to their condition, which will convert them again into useful citizens. The whole problem of repatriation bristles with difficulties, and the question of prothesis for the maimed and professional re-education or training is largely dependent upon the help of the medical profession.

I think it is no breach of confidence to say that it is intended to build curative workshops in connexion with our military hospitals here, and it is also, I understand, the intention of the military medical authorities to secure the help and advice of one of our Brisbane surgeons, who will be afforded special facilities to become *au fait* with the latest methods employed at home, to restore the men to a wage-earning condition.

One difficulty met with here is due to our long distance in time and space from the war centre. Necessary exercises and vocational or curative

training are in abeyance during the long voyage out, and men are also apt to become indolent. There is no doubt that the most salutary medicine for the returned soldier is work. This has been proved in a small way by the excellent results obtained at Kangaroo Point by the Red Cross teachers and also by the Industrial Workshop in Edward Street, run by Mrs. Andrews. Men confined to bed become quite happy when initiated into the mysteries of basket making, etc., and some apparently hopeless alcoholics have been redeemed by this discipline of work.

After more than three years' experience of war, it seems reasonable to expect that the authorities would have developed a workable scheme, whereby everything possible would be done to restore the maimed to the utmost limit possible.

The Interests of Men on Active Service.

The question of the appointment of a Sub-Committee to assist returned medical men was discussed during the year, but it was decided that the Council was the most suitable body to advise and help. So far no scheme has been adopted to provide exchanges with men who have been a long time at the front. Should conscription be carried in Australia, I presume that the Federal authorities will make an attempt to develop some method to organize the profession, with a view to meet the needs of the military medical services, whilst conserving the interests of the civil population.

So far, military requirements seem to have been met by voluntary effort, but the sacrifice of those who have gone to the front, and who have devoted themselves to military service at home, have met with no attempt at compensation by those who have remained behind, and have reaped a rich reward from the increased practice resulting from the absence of our patriots. It is to be hoped that we are not losing sight of our obligations to conserve the interests of our absent brothers.

Would it be possible to establish a fund to reimburse some of the losses incurred by those at the front, by a voluntary tax on the incomes of those of us who have remained at home? A percentage of our incomes might be paid into the fund which might be used to give a fresh start to those whose practices have been scattered whilst in the service of their country. A small committee might be established to assess the contributions according to the income tax returns of our members. I do not think this is too much to ask of us who have been earning steadily, whilst our volunteers have made such sacrifices of health and life for us.

There would be nothing of charity in an effort of this kind, but only a feeble recognition of the just debt we owe to our gallant friends.

The feeling of obligation to our brothers at the front has influenced me to urge the reconsideration of the lodge question and the position of the country hospitals. We ought to have our house in order against their return, that they may find more satisfactory conditions awaiting them, and less need for them to scramble for a living.

There are many other problems upon which one might touch, but I have already kept you long

enough. It only remains for me again to thank you for your kindness to myself and your generous help during these trying years of office, and to welcome to the Chair our gallant comrade who has distinguished himself so nobly on the tented field. I am sure that his well-known courage, sane common-sense, and well-balanced judgement will ensure the Branch a prosperous and profitable New Year.

Our President has received more honours from His Majesty than any other member of the Australian Army Medical Corps, except General Sir Nevill Howse.

TRENCH NEPHRITIS.

By W. M. Shepherd, M.D. (Edin.),

and

L. J. J. Nye, M.B. (Syd.),
Atherton, Queensland.

In a campaign like the present, it is not surprising to find that several new diseases have been described, and the most notable of these are trench fever and trench nephritis. It can hardly, however, be said that trench nephritis, or, as it might more appropriately be called, epidemic nephritis, is a new disease, but rather an old disease with a new name, as the perusal of the literature on the American Civil War will show. One of the most remarkable features in the medical history of this war, when it comes to be reviewed, will, no doubt, be the surprising rarity of epidemic diseases, except for outbreaks of typhus in Serbia, dysentery on Gallipoli, and isolated outbursts of cerebro-spinal meningitis; but if we confine ourselves to the campaign in France and Belgium, it is gratifying to find that medical science has surmounted many difficulties and achieved much by prophylaxis alone. Typhoid and dysentery have in the past dogged most campaigns, and were particularly rife in South Africa, where they accounted for more deaths than shell fire or bullets, but cases of nephritis of any form have been singularly infrequent. We have no literature pointing to the prevalence of nephritis in the Franco-Prussian, Hispano-American or Russo-Japanese wars, and we are, therefore, bound to ask the question why it should have appeared in the American Civil War? Although one can hardly draw comparisons, it will be interesting to recall that in the American Civil War the conditions resembled in a small way those of the present campaign, *viz.*, prolonged trench warfare, but the disease has not yet assumed the proportions it did then. In the American Civil War, 14,187 cases and 360 deaths were recorded. With the present epidemic in the British Expeditionary Force, statistics show a gradual increase in the number of cases, and each month brings the number still higher.

Reports from Vienna tell us that the disease has broken out among the German and Austrian soldiers, and we may safely infer that the same factor is operating throughout.

Before entering on the study of trench nephritis, it might be well to consider briefly the abnormalities of the urine that are found in these conditions.

In health, the amount of urine depends on the functional activity of the glomerular tuft, which in turn depends on: (1) The activity of the glomerular epithelium, and (2) the rate of flow of the blood through the tuft. Besides these factors, it is certain that the nervous system controls the kidneys, so as to influence the amount and rate of flow, while chemical products of the blood and ductless glands have also to be considered. Dilatation of the kidney vessels produces an increased flow of urine if the general vessels of the body are constricted. Interference with the renal circulation, whether by production of constriction or dilatation of the vessels, is followed possibly by changes in the renal epithelium, and these changes are, no doubt, responsible for the variation in amount and composition of the urine. Direct inhibition of the flow of urine by reflex nervous action is well known, *viz.*, during passage of a calculus, etc. The presence of albumin in the urine implies some interference with the renal filter, which, when intact, prevents the passage of the proteins of the blood into the urine. Its mere presence cannot be regarded as an indication of Bright's disease; the dictum of Thomas Fuller in this connexion is particularly appropriate, *viz.*, "That reasons drawn from the urine are as brittle as the urinal."

Functional or physiological albuminuria is held to occur in certain cases, and great disputes have arisen around this point, but all seem to agree that the exciting cause must be something excessive, and throwing more than usual strain upon the excretory organs of the body. The nervous system, too, influences the excretion of urine, and albumin may be present in small quantities in brain tumours and following epileptic fits, delirium tremens, exophthalmic goitre and head injuries. We have met with several instances in cases operated on for gun-shot wounds of the head, in which albumin has been present in traces.

In any disease attended by fever, albumin may be present in small quantities in the urine; it generally appears during the height of the fever, and disappears during evanescence.

Again, changes in the blood, the presence of toxins, chronic poisonings and disturbances of the circulation, produce their effects upon the kidneys, although there may be no gross lesions in the organs.

With extra renal causes we do not propose to deal.

Modern views regard nephritis as usually produced by some toxic agency, and especially as a result of infection, but that infection is often so trivial that it is often apt to be overlooked. Sore throats, severe colds, bronchitis, and diarrhoea have all been suggested, but so far nothing definite has been proved.

To speak of nephritis in the strict sense of the term, without associating it with exposure, would be breaking down one of the hallowed traditions of medicine. Osler gives exposure to cold and wet as one of the most frequent causes of the disease, and then mentions the toxins of specific fevers, notably those of scarlet fever, less commonly of diphtheria, small-pox, measles, malaria, cholera, yellow fever, etc. Syphilis, however, must not be forgotten. The disease is prone to occur in the course of a septicæmia, and in acute

conditions of the skin, such as extensive burns and skin diseases.

A primary infective epidemic nephritis has been met with in Italy (Osler).

Toxic agents may give rise to acute congestion of the kidneys, which may go on ultimately to a definite nephritis. Amongst these, perhaps the best known are mercury, turpentine, arsenic and carbolic acid. Alcohol of itself never gives rise to acute nephritis. One is perfectly justified in assuming from the above that exposure to cold most often determines the onset of acute Bright's disease than gives rise to it. The subtle chemistry of the blood and the many toxins produced in the human body require closer investigation in this light.

Trench Nephritis.

From a study of cases which have come under our observation at a base hospital, it would appear that trench nephritis, or, as it might be more appropriately termed, epidemic nephritis, is not confined strictly to men who have been in the trenches, as was at first supposed. In the series of cases, a few appear to have contracted the disease in billets, and some at a considerable distance behind the firing-line. None of the cases which have come under our observation, had originated at the base, but Sir J. Rose Bradford instances several cases which have occurred among Royal Army Medical Corps orderlies, whose duties were confined entirely to base hospitals.

Exposure has been suggested as a cause, but while a few admit it, the majority give no history at all, and it is difficult to correlate the fact that, during the severe winter of 1914-15 there were but few cases of nephritis, and it was only as the year advanced and the conditions improved that the disease assumed anything like epidemic proportions. In the present epidemic, the outbreak appeared to date from the spring of 1915, in March and April; there was a gradual increase throughout the summer months, greater than the relative increase in the number of troops in the field. There is no doubt, however, that exposure to cold will set up a nephritis in a kidney already damaged by a previous attack or predisposed through syphilis, alcoholism, etc.

It is a significant fact that the Indian troops have not suffered to any marked extent from the disease, although their conditions of life have been very similar to those of our soldiers, and this lends colour to the theory brought forward by the French physicians that trench nephritis is really scarlatinal in origin, as natives of India enjoy immunity to scarlet fever. The question of water supply demanded consideration, on the ground that prolonged use of chlorinated drinking water has a deleterious effect on the kidneys; but this has since been disproved by experiments on animals, and by the fact that many of the patients have never drunk chlorinated water.

Diet cannot be considered as a factor, as the disease would then be more pandemic. Intestinal toxæmias, typhoid and paratyphoid have all been suggested, and even anti-typhoid inoculation has been blamed, but in none of the cases we have investigated was there any history pointing to this origin. Moreover, if this

were the case, we would have expected epidemic nephritis to have figured high in the South African campaign. Intestinal toxæmia itself can be excluded, in that it is generally associated with the presence of indican, urobilin, and calcium oxalate; but tests have failed to give any indication of these constituents.

Metallic poisons have been negated by a process of ultra filtration of the urine and the use of collodion sacs, according to the method of Walpole.

Occupation in civil life appears to have no bearing on the disease.

Age.—The incidence appears to be greater in young men, and the table prepared by Sir J. Rose Bradford is instructive in his series of cases. The period of service is of interest, and it will be referred to later.

It would appear from our series that cases do not occur in men with less than six months' service, or if they do, they are extremely few.

Morbid Anatomy.—The morbid anatomy of the kidneys of a patient who died shortly after admission to hospital showed great enlargement of both organs. The glomeruli were acutely inflamed, and there was much damage of the convoluted tubules and accumulation of altered cells and leucocytes. The interstitial tissue of the kidney was inflamed, and there were numerous areas of small cell infiltration about the capsule and throughout the substance of the kidney. No organisms of any kind were detected.

Reference.—Professor F. D. Andrewes, who investigated a few fatal cases, found a subacute, diffuse nephritis.

Pathology.—Attention is naturally first directed toward the urine. Catheter specimens, and those got from the middle of the stream, were found to be sterile, and in only one was *bacillus coli communis* found. Blood cultures showed nothing, and the Wassermann tests proved negative in the cases selected. In no case were cultures made from throat swabbings, and investigations by others in this direction have been quite inconclusive. The blood counts were normal. The red and white blood cells were neither increased nor diminished throughout the disease. In a number of cases there was a slight eosinophilia.

Signs and Symptoms.—The onset is generally sudden, and few of the patients complain of any premonitory symptoms. Here and there a man reports a general malaise for two or three days; but this seems to be rather the exception than the rule. The vast majority report sick because of some swelling (œdema), which generally starts in the face and legs. Not a few cases, however, set in with bronchitis, while in others the illness dates from the onset of dyspnoea. A few patients have complained of slight sore throat, but in none have we noted any definite tonsillitis. The œdema becomes generalized in the majority of cases, but in a few it remains localized to the face and legs. Transitory œdema of the hands has frequently been observed. Headaches, mostly of the occipital variety, are an almost constant symptom, while pain in the back, occasionally shooting down to the legs, is a noticeable feature, and many patients complain much of it in the early stages. In two of our cases the patient complained of pains along the shin bones, similar to those of trench fever. Vomiting has been noticed in not a few, and diarrhoea is occasionally

troublesome. Cough and bronchitis are frequently present, and this appears most marked in those who have contracted the disease in winter or the early spring months. Many cases in the early stages present a slight and irregular fever; but this is not the rule. A rigor or shivering attack has been noted in only one case. Hypertrophy of the heart is not often found, and the blood pressure appears to vary considerably. The second aortic is generally slightly accentuated. The most marked feature of the disease is associated with the urine. The urine varies considerably in amount. Some patients, even in the early stages, pass large quantities, while others have what practically amounts to anuria. The urine is often bright red with blood, and this is sometimes the first thing noticed. Men have been sent down from the Casualty Clearing Station with the diagnosis of hæmaturia, but on the other hand the microscopical tests have often failed to reveal its presence. In one case the patient continued to pass bright red urine for seven days while under treatment. The amount of albumin varies markedly in the series, from a trace to semi-solid, or even solid. Casts were found in the majority of cases, but were absent in some. They included blood, granular, and hyaline casts, the latter being almost constantly present. Leucocytes were invariably found. Organisms were not found in the urine.

Eye Changes.—In only one case were any changes noted in the fundus, and this was probably a case of chronic nephritis.

Fits have occurred in not a few of the cases. They are occasionally preceded by severe headache, and the patients are dull and apathetic, and take little interest in their surroundings; but they may come on without any warning whatsoever, and in patients who have given no symptoms of a severe condition. The fits do not resemble those seen in nephritis of civil life, but rather resemble epileptiform seizures, and remind one forcibly of eclampsia of pregnancy. The patients are very restless in the intervals between the fits, and throw themselves violently about.

Although dyspnoea is frequently present as an early symptom, the more severe forms of uræmic dyspnoea, such as the well-known hissing type, and Cheyne Stoke's breathing are never seen.

The blood pressure is raised during the fits, and is quite appreciable to the finger; but it falls rapidly on their subsiding. Lumbar puncture during the fit showed the cerebro-spinal fluid under high tension, and on venesection the blood was extremely thick. Babinski's sign was elicited in the intervals between the fits. In one case the patient completely lost his memory after the fits, and only regained it after the lapse of a week.

Course and Prognosis.—The disease, as a rule, runs a very favourable course, and only one death is recorded in the series observed. In this case no treatment could be carried out, as the patient died within a few hours, and there was every reason to doubt that the case was really one of trench nephritis. The majority of patients cease to complain of any pain after the oedema disappears, but a few have lingering pains in the back and other slight gastric disturbances,

hyperacidity, etc. It is a remarkable fact that most of the patients look extremely well, although they continue to pass urine loaded with albumin; they lack the puffy pasty countenance so commonly associated with the disease in civil hospitals, and to the casual observer appear quite fit. Under treatment the albumin rapidly disappears, and it comes as a surprise to the physician that in the course of from 24 to 48 hours a urine, previously containing a large amount, is found to have but a faint trace. Again, cases are noted which, on admission, showed only a mere trace of albumin, and in which, after a few days, tests revealed albumin in abundance. The great majority of cases cleared up in from a week to ten days, but a tendency to relapse has been noted in a few. Captain Langdon Brown, in a series of cases investigated in London, notes this tendency to relapse, and quotes cases in which recurrence has occurred after the patients have been discharged to convalescence homes, as well as cases in which albumin persisted in the urine for 14 weeks. This, of course, would lead one to suppose that some cases tend to become chronic, but from our observation here, the cases have always cleared up rapidly, and only in cases with a questionable history, have we observed the above. Large quantities of blood in the urine seem to have little influence on the prognosis, and the blood may persist for six or seven days.

The dyspnoea noted in many cases disappears almost immediately after the patient is put to bed and got under suitable treatment. Coughs or mild degrees of bronchitis seldom persist for more than seven to ten days. If the albumin is found to persist in fair quantity after a fortnight of treatment, it is probable that the patient will not recover completely, at least for several months. The same may be said of patients who continue to pass traces of blood in the urine; but at no time have we seen the disease going on to one of chronic nephritis. Although the time has not arrived for a definite statement to be made regarding the amount of permanent damage done to the kidney, it would appear to us that the kidney is little, if at all, damaged. Whether the patient will be predisposed to nephritis as met with in ordinary life, is a debatable point, and one on which further evidence is required before any statements can be made.

Treatment.—Broadly speaking, the treatment adopted in the early stages conforms very much to that of acute Bright's disease, the object being to promote excretion, to keep the kidneys well flushed out, and to wash the debris from the tubules. An appeal should be made to the skin by placing the patient between blankets and clothing him with a flannel night shirt. The bowels should be kept freely opened. We have found it a distinct advantage to produce a mild degree of diarrhoea by administering 1.8 gm. (30 grs.) of *pulv. jalapæ. co.* every evening, followed by 14 gm. ($\frac{1}{2}$ ounce) of *mag. sulph.* in the mornings. The dropsy has always yielded to this treatment, and on no occasion have we had to employ any other method in uncomplicated cases. Hot bottles were a very valuable adjunct to produce sweating. Hot air baths were used in a few of the more severe cases. Pilocarpine was injected in some cases, but it ap-

peared only to aggravate the condition. Diuretic mixtures were not given as a rule, as they increased the discomfort of the patient and tended to produce suppression. In uræmic cases 0.06 c.cm. (one minim) of croton oil was given, and the fits controlled by injection of morphine 0.0125 gm. (gr. $\frac{1}{4}$), and by the use of 1 gm. (15 grs.) each of chloral hydrate and potassium bromide *per rectum*. This had to be repeated at four-hourly intervals. One severe case required the administration of chloroform.

Diet.—The diet should consist of milk (3 pints) and barley water (3 pints) per day. Soda water was given *ad lib.*, and as much Imperial drink as the patient could take. It was found a distinct advantage to add *sodii bicarb.* 0.6 gm. (gr. x.) to each two-hourly milk feed. This prevented gastric disturbances and indigestion, which was complained of by some patients. This purely fluid diet was persisted in till the albumin disappeared, and the urine was clear. For three successive days, the patient was given an ordinary milk diet. If the patient were put on a full diet or allowed up immediately after the disappearance of albumin from the urine, a relapse, in so far as return of albumin is concerned, always followed.

Conclusion.

(1) The disease is due to excessive strain and fatigue in men not accustomed to such vicissitudes of life, whose nervous system has been subjected to considerable shock.

(2) A considerable number are cases of latent nephritis, and are not recognized as such.

(3) Some cases are probably due to some congenital defect in the kidney, such as cystic disease and the like.

From the study of the series of cases and the recent literature on the subject, it would appear that there is some as yet unrecognized nervous element associated with the disease. The true so-called epidemic nephritis does not present the typical casts of nephritis of civil life; indeed, the absence of casts in some is remarkable, as is also the variability in the quantity of urine passed and the amount of albumin present. The sudden disappearance of the oedema and albumin from the urine, the rapidity with which all signs and symptoms clear up when the patient is put to bed and placed under suitable treatment, the general appearance and well-being of the patient, make one pause to think.

Suggestions that the disease is due to some undiscovered organism or protozoal infection are not convincing, as we would then have expected a more widespread epidemic, unless we admit that only certain individuals are susceptible to the infection and a small number at that. So far as we have been able to ascertain, the case incidence in the French Army is smaller than that in our own; this is of interest from the point of view of their previous training.

As regards the age incidence, no definite conclusion can be drawn, as we would expect to find the disease more prevalent in men of from 25 to 35, seeing that the bulk of the army is formed of men at that period of life.

The physiology is such that the amount and quantity of the urine depends upon the circulation in the kidney, and no doubt also upon the activity and secre-

tion of the ductless glands. It is a well-known fact* that nervous excitement, etc., can influence the flow and quality of the urine excreted. It is of interest that the great majority of cases have what amounts to a polyuria, and we see patients passing 2 to 2.75 litres, or even 3.25 litres, per day, in the course of the disease. This polyuria kept up over an indefinite period, gradually exerts its influence on the highly organized cells of the kidney, and we have produced a mild degree of nephritis, with all its train of symptoms, *viz.*, headaches, pain in back, etc., etc.

The early onset of dyspnoea, in many cases accompanied at times by bronchitis, is of more than usual interest, and we would compare it with the onset of an attack of asthma, which all writers agree has a strong nervous element behind it. We get some support from the increased percentage of eosinophile cells in the blood. It would appear a feasible suggestion that the disease is due to nervous influence, *i.e.*, increased tone of the vagus in susceptible individuals, aggravated and brought on by excessive fatigue and nerve strain during the course of their duties. This is all the more likely to occur in men who are suddenly called up from the various walks of life to take up strenuous and nerve-racking military duties, with very short previous training. The men in the trenches must accordingly suffer most, as they are undoubtedly subjected to greater strain by shell fire, etc. This is borne out in point of fact by the preponderance of cases amongst the infantry. This may also afford some explanation of the gradual increase in the number of cases occurring from March to October, as the spring and summer months are most favourable to military operations.

Since writing this, it has come to our notice in an article reported from Germany on a discussion on this subject that Dr. Rumpel gave an account of a forced march in full kit, after which 24% of the men had a trace of albumin in the urine. In 80% of these hyaline and granular casts were present, and in 25% red blood cells, thus showing that fatigue plays a very important part in the causation of trench nephritis.

Reviews.

ELECTRO-THERAPY IN GYNÆCOLOGY.

"Electro-therapy in Gynæcology"¹ presents in an original and essentially practical manner the observations, experience and guidance of the author, Dr. Samuel Sloan. It is an excellent book, pregnant with direct, courageous statements of fact, challengeable alone in the light of equal experience in the field of electro-therapeutics.

The publication of such a work is opportune, since sedatives in dysmenorrhœa, ergot in profuse bleeding, caustics and powerful antiseptics and medicated douches have as inadequately served their purpose, as did their antecedents of the previous decade.

Methods based upon an increased and ever-increasing knowledge of electro-physics, electro-statics and electro-dynamics, and upon the erudition obtained by profound research in the fields of chemical, electrical, radiological and bacteriological practice must surely supplant the more primitive and empirical procedures of the past.

Surgery has produced wondrous results in the field of gynæcology. These results have initiated inordinate zeal and awakened equally inordinate anticipation in the minds of

¹ Electro-Therapy in Gynæcology, by Samuel Sloan, M.D., F.R.F.P.S., Glas.: 1917. London: William Heinemann, Ltd. Royal 8vo., pp. 298, Price 12s. 6d. net.

younger surgeons. Experience alone portrays pitfalls, and judgement is trained by disappointments. An operation is surely unsuccessful, though perhaps only relatively so, which does not remove the pain, which does not alleviate, in entirety, the distress, which does not overcome the sterility, as promised prior to administration of the anæsthetic. The gynaecologist should constantly aim at curing an organ and restoring its normal function rather than extirpating it.

Dr. Sloan makes bold claim upon our credulity, but his high distinction as a physician and gynaecologist, as a thinker and original worker inspires a well-deserved confidence, and rightly claims for his book a place in the library of every man wishing to keep in touch with progressive medicine.

Time alone will prove results, and the author invites criticism.

The author justly premises, in his critic, equipment with a sufficient knowledge of electro-physiology, and a reasonable experience of gynaecological diseases and of the ordinary treatment of these affections. Added thereto, he might have claimed an absence of bias, and the intuitive faculty of sound surgical judgement. Thus endowed, and with the plain instructions given, the practitioner may build his conclusions upon the sure foundations of personal experience.

The value of electro-therapeutics in neurasthenia, in the absence of psychasthenia, has been established, as well as in asthenic conditions of the abdominal sympathetic nervous system.

Less is really known of the potentialities of electrolysis, high-frequency currents and ionization, and for these forms of treatment the author makes his boldest claims.

"If, in the whole realm of therapeutics, there ever can be absolute assurance of success, it is in the field of ionization for septic disease. Nothing in ordinary medical therapeutics can equal it."

A note of warning is struck. He states that ionization requires care in its application and sound surgical judgement in the selection of cases. It is difficult, however, to reconcile his claims with the physical power of the electrical current employed in practice to move electrons through the complete structure of living tissue.

Dr. Sloan's work will greatly aid in placing electro-therapeutics on a scientific basis, and although some views may be debatable, the consensus of argument is consonant with modern gynaecological thought and practice.

EAR AFFECTIONS OF THE WAR.

A small book which should be of very considerable assistance to general practitioners, especially those examining in connexion with the Employers' Liability Act, who wish to tabulate exactly the state of hearing and equilibrium of a patient, is that of Bourgeois and Sourdille,¹ who devote almost half the volume (i.e., 80 pages) to a clear and lucid exposition of the necessary tests.

The apparatus required is of the simplest character, and the procedure is explained concisely and amplified by illuminating diagrams. With the methods set out an analysis of disturbed function of the cochlear and vestibular nerves is rendered easy, and the tests suggested to circumvent malingering are simple but convincing. A table of hearing standards, as adopted by the French army, is a useful addition. The early portion of the book deals with (1) non-traumatic inflammation of the ear, (2) war wounds, and (3) deafness occasioned by the conditions of war. Each affection is shortly and succinctly described, special attention being paid to prognosis and treatment, the former being of great moment as regards future fitness for military service. A helpful table contrasting the signs and symptoms of acute and chronic otitis media, alone, and complicated with furuncle and mastoiditis, as well as furuncle alone, will be appreciated. Functional deafness provides an interesting chapter. The examiner is advised to forward cases of this nature to the neurologist after completing the ear tests.

Although there is little new matter presented, the contents cover practically the whole of the commoner affections

¹ *Diagnostic, Traitement, Expertises.—Otitis et Surdités de Guerre.* Par H. Bourgeois et M. Sourdille. Collection Horizon: Précis de Médecine et de Chirurgie de Guerre; 1917. Paris: Masson et Cie, Crown 8vo., pp. 188, illustrated. Price, Fr. 4.

of the ear, the divisions and groupings are convenient for ready access, and will appeal to the busy practitioner who has little time to struggle through the complicated procedures of the large text-books.

THE HEALTH OF PORT ADELAIDE.

Dr. P. Bollen, the Medical Officer of Health of Port Adelaide, has been allotted four and a half pages of the neat little booklet which the City Council issues each year. As his report covers a whole year, ending on September 30, 1917, the information contained in the report is necessarily much compressed.

For the statistical purposes of the record, the population is taken to be 27,695, the number estimated by the Registrar-General on January 1, 1917. The total number of births registered during the year was 801. The birth-rate was therefore 28.92 per 1,000 of population. In 1916 it was 29.95, while in the years 1912-1916 it varied between 32.8 and 37.65. The number of deaths registered during the year was 255, of which 38 took place in hospitals and institutions outside the municipality. The death-rate was 9.2, which is considerably lower than the death-rate during the preceding five years. The number of deaths of infants under one year of age was 41. The infantile mortality is consequently 50 per 1,000 births.

The total number of cases of diphtheria notified was 117. There were two deaths. The same number of notifications of pertussis was received, and the same number of deaths from this disease occurred. There were 62 cases of measles, two of which were imported cases, and 57 of scarlet fever, including one imported case. No deaths from either disease took place. The number of cases of enteric fever notified was 23; of these, two were reported from outside. Only one case was fatal. There were 31 cases of pulmonary tuberculosis arising in the city, and two imported from elsewhere. The total number of deaths from this cause was 19. In addition, there were seven cases of erysipelas, four of epidemic cerebro-spinal meningitis and one of puerperal septicæmia. It appears that, in addition to the 24 deaths mentioned above, eight deaths from infective diseases in patients from Port Adelaide took place in the Adelaide Infectious Diseases Block and 13 in the Adelaide Children's Hospital. The total number of deaths from tubercular disease was 26.

Dr. Bollen points out that the houses in Port Adelaide proper, Dockville, Portland, Queenstown and Alberton, have been connected up with the sewers. He remarks that the surface drainage is still very defective. Similarly, he calls attention to defects in the water supply at Le Fevre's Peninsula. He advocates an amendment of the *Health Act* for the purpose of requiring all new dwellings to be provided with water tanks to conserve rain water, and also to have bathrooms.

The report concludes with a summary of the work undertaken by the City Nurse and the two Health Inspectors.

Naval and Military.

CASUALTIES.

The 369th list of casualties, which was issued on December 13, 1917, does not contain the names of any medical officers in the Army Medical Corps. The 370th list, issued on December 14, contains reference to the wounding of three medical officers. Captain Frank William Fay has been wounded for the second occasion (gas), and the word "severely" is attached. Captain John Robert Barriskill and Major Philip Allan Maplestone have both been wounded.

HONOURS.

It has been announced in London that Major E. L. Hutchinson, Major P. Maplestone and Captain W. H. Collins have been awarded the Distinguished Service Order.

Dr. Archie L. McLean has been awarded First Class Honours, the University Medal and the Ethel Talbot Memorial Prize for his M.D. thesis in pathology at the University of Sydney.

The Medical Journal of Australia.

SATURDAY, DECEMBER 22, 1917.

Looking into the Future.

Among the many matters of importance and interest passed under review by Dr. W. N. Robertson in his excellent Presidential Address, delivered to the members of the Queensland Branch on November 6, 1917, and published in this week's issue, there is one which has caused many medical practitioners in Australia much heart-burning and hard thinking. Dr. Robertson would ask every member of the British Medical Association who is prevented from taking an active part in the war to relinquish a substantial portion of his income, that something may be done to lessen the burdens which those who are serving, may have to bear on their return to Australia and private practice. This matter has been touched upon on many occasions in our pages. Dr. F. S. Hone was the first to broach the subject; his ideas took firm root in the minds of the medical practitioners in the Commonwealth. Dr. E. A. R. Bligh embraced the opportunity with singular energy and endeavoured to propound a scheme for discussion. Unfortunately the details of this scheme were not acceptable to the majority of the members of the New South Wales Branch of the British Medical Association. The Branch Council effectively killed the proposal; they agreed with the underlying principle, but rejected the suggestions, instead of saving as much of the scheme as might be of practical value and building up a more workable one on this basis. Dr. J. C. Verec, in his Presidential Address to the South Australian Branch in June of this year, dealt with the matter and established the principle without evolving a definite plan of campaign. The principal has now travelled through the minds of the men in the various States and has surely gained a firm foothold. Everyone assents to the proposition that those who remain at home, should be prepared to do something to assist our brave

colleagues who have faced death for the honour and glory of the British Empire, who have given of their best to minimize the sufferings of our splendid Australian boys in the fighting line and who have sacrificed self and self-interests for the common good, like men. We have but to read the official records of the deeds of our colleagues in France and elsewhere to recognize that a monetary sacrifice on our part is the smallest tribute we can pay to their manliness. It is not difficult to take a measure of what should be done. In the first place those who find their practices deteriorated or gone on their return, should be given a fresh start. Those who had not yet engaged in practice when they went forward, should be assisted in a twofold manner; by equipping them better for civil practice and by helping them to tide over the waiting time. In the next place partial incapacity of a temporary or permanent nature may limit some of the men's earning capacity, and some means of assistance should be devised to lighten the lot of these men. Lastly, some additional support should be extended to the widows of men who have fallen in the gigantic struggle, when assistance is needed.

To provide for all this will necessitate a large sum of money. No compulsory levy can be imposed, and we fear that any attempt to collect a definite percentage of each man's income would lead to disappointment. It has been suggested to us that if the assistance necessary to give the men a fresh start were placed at their disposal as a loan, which would be repayable after they have established themselves, the money could be capitalized and serve as a fund for the widows and children of medical practitioners who are left insufficiently provided for. A workable scheme could be evolved on the following basis. The Federal Committee of the British Medical Association could ask every medical practitioner to give a sum of £15 a year for three years. The response should be good, if an energetic committee were appointed in each State for the purpose of canvassing the members personally and urging all to participate in the movement. If the number who contributed, fell short of two thousand, the local committees would be justified in looking to the more prosperous men with large practices, large reputations, large purses and large hearts to make

up the deficiency. By this means £30,000 would be collected each year for three years. As the men returned to Australia, sums up to £300 could be lent to them at a reasonable rate of interest. The interest would enable the Federal Committee to extend assistance to widows of men who have lost their lives in the service of the Empire, and to more or less completely incapacitated practitioners. As the loans are repaid, the money could be capitalized, so that the interest could serve for a benevolent purpose, to be determined by the Federal Committee. The matter is becoming one of urgency, since any scheme which can be put forward, must be set going two or three years before full advantage can be taken of it. Delay is no longer excusable. Perhaps some Branch of the British Medical Association will refer the matter to the Federal Committee in order that a start may be made early in 1918.

MILK STANDARDS.

Physiologists have been engaged for many years in analysing with extreme care and with the most accurate methods yet devised, the tissues and tissue fluids of the human and animal body. The results of these analyses have been controlled over and over again and the effects of geographical and meteorological variations on the composition of the substances have been tested in all parts of the world. Modern medical science depends on the accuracy of these observations and consequently any practice which is based on erroneous bio-chemical assumptions, must be regarded as unsound. We fear that much practice is built up with a complete disregard of the established facts of physiological chemistry. In the case of blood, urine and milk, it is of the greatest importance that we should be informed of the variations in composition within physiological limits, and that we should have knowledge which enables us to distinguish a healthy secretion from a pathological one. The significance of accuracy of knowledge in connexion with the composition of milk is perhaps wider than that of the other constituents of the body, since the health of the young, and also of the adults, is dependent on the ingestion of the normal secretion of the mammary gland. While physiologists have been expending energy, ingenuity

and patience in an endeavour to eliminate error and to establish Nature's facts, the legislator has frequently rushed in and set up standards, which correspond so little with what is met with in actual life, that it must be assumed that they have been introduced for the purpose of keeping a controlling hand on trade rather than for the purpose of safeguarding the interests of the community. It is inconceivable that legislators should be so devoid of sense that they dare to improve on Nature, nor can it be supposed that the standards have been set up as the best available means of removing the influence on the public of those tradesmen who deliberately offer for sale milk and milk foods really unsuitable for consumption by infants. Every physician and every physiologist recognizes that the standards adopted in Australia and elsewhere tend to exclude as many good milk preparations and milk foods as bad ones.

In another column we publish a short résumé of an able communication which Dr. H. S. Wardlaw has recently made to the Linnean Society of New South Wales. In a previous communication he recorded the results of analyses, conducted with great care, of the secretion of the healthy human breast. In the present article he deals with the analyses of milk derived from a herd of healthy cows. These two contributions should be studied together, and they should be read with a copy of the regulations dealing with the standards of human milk, infants' foods and cow's milk which have been introduced in the various States of Australia. It will be apparent at once that those who have control over the sale of infants' foods and milk preparations, have determined that the variations of these products must be kept within much narrower limits than the variations met with in the milk of animals and human beings. Fortunately for the infants the regulations under the several Pure Food Acts do not apply to a mother nursing her own infant, and if a mother or her medical adviser chooses to ignore the warning on the label of many excellent proprietary foods and milk preparations, the infant may derive its nourishment from them. It has been determined by the regulations dealing with infants' foods, that unless they conform approximately in proportional composition to human milk, they shall be labelled:

"Unsuited for infants." Without the proposed concession of a 30% variation from the mean, which has been put forward by the Federal authority, it is difficult to interpret what is the meaning of the word approximately. Assuming for the moment that the mean, as determined for Australian women by Dr. Wardlaw, be accepted as the proportional composition of human milk (an assumption which is probably not justified in fact), over 60% of the samples analysed would have to be rejected as having one or more constituent removed more than 30% from the mean. If the interpretation be based on some other mean figures, and the 30% range on either side of the mean be neglected, the proportion of women who nurse their babies successfully on "milk unsuited for infants" must be very large indeed. In regard to cow's milk, the majority of the standards contain values for solid not fats and for fats. The former, by curious coincidence, is fixed throughout Australia and in Great Britain at 8.5%. In the series of 109 samples, it varied from 6.4% and 10.75%. The usual standard fixed for fats is 3.2%. In Dr. Wardlaw's series the fat content varied between 2.6% and 7.75%, with a mean of 5%. Tested by the standard given above, no less than 35 samples out of 109 or 32.1% were deficient either in solids not fat or in fat. To legislate on this basis is therefore unreasonable, both in regard to alleged adulteration and in regard to the suitability of milk preparations for infants.

CARRIERS OF MENINGOCOCCI.

It has been known for some years that the meningococcus can be isolated from the throats and nasal passages of persons who have not been ill with cerebro-spinal fever, and who do not develop the disease at a later period. It is usually supposed that the diplococci can be transmitted from these healthy but infected persons, who are commonly designated "carriers," to uninfected persons, causing them to contract the disease. The detection and disinfection of individuals harbouring meningococci has engaged the attention of those entrusted with the care of the health of large numbers of people. Recently Fleet-Surgeon P. W. Bassett-Smith, Temp. Surgeon G. R. Lynch and Mr. S. Mangham have published¹ some results of a study made on members of the Royal Naval Forces at a naval depôt near London. Their communication deals with the examination of swabs from 11,000 persons during the period from Decem-

ber, 1916, to June, 1917. These investigators had already been occupied for more than twelve months with the same problem.

Meningococci are sought in the throats of every person coming into the depôt. The throat is rubbed with a swab and the microbes sown on plates. The plates are maintained at body heat for twenty-four hours. Suspicious-looking colonies are examined, after staining by Gram's method, for organisms with the correct morphology and colouration of the meningococcus. Subcultures are made into glucose and sucrose-peptone-serum water. After forty-eight hours' incubation, a slope inoculation is spread upon trypsin-legumin-agar from every glucose tube corresponding to a sucrose tube in which no formation of acid is observed. From the slopes an emulsion is prepared in saline solution containing formalin. If the growth does not emulsify, it is assumed that the organism is not the meningococcus. The emulsion, after being heated to 60° C., is tested for agglutination with Flexner's polyvalent serum. The agglutinative tests are allowed to stand at 55° C. for twenty-four hours before the results are noted. These investigators are strongly of opinion that the meningococcus cannot be identified with certainty without the use of agglutinative tests with meningococcal antiserum. The appearance of the colony and the form and colouration have not yielded in their hands any reliable diagnosis of the organism.

Among 7,777 persons entering the naval depôt, 349 carriers of meningococci were found. This represents an infection of 4.5% of those examined. The carriers were isolated and subjected to disinfection. Weekly examinations of swabbings from their throats were made and they were permitted to return to duty when negative results were obtained upon two consecutive occasions. No carrier is drafted out from the depôt, until the bacteriological examination yielded a negative result at four consecutive weekly tests. The throat of every man drafted for service from the depôt, was examined for the presence of the germs. Among 3,391 men tested before leaving the depôt, 342, or approximately 10%, were noted to be harbouring meningococci. The investigators have concluded that the opportunities for infection occur more frequently in the depôt than among the general population. In this connexion they mention that 19 out of 96 persons in contact with patients developing cerebro-spinal fever, contain meningococci in the throat. Infection seems therefore to have occurred in 20% of those in contact with infected persons. It may, however, be doubted whether the evidence is sufficient to establish the conclusion that infection takes place more frequently in the depôt than in the general population. The swabbings made from the throats of carriers, sometimes fail to reveal meningococci. A swab taken later may yield the organisms. The detailed tables of the results of the consecutive weekly examinations of the carriers show that positive and negative findings are freely interspersed. Each man is tested on entering the depôt and before leaving for duty elsewhere. If he is found free at the first examination, he is not tested until he is ready to go on service. A carrier of men-

¹The Journal of the Royal Naval Medical Service, Vol. III, p. 428, October, 1917.

ingococci may not be detected at his initial examination, while the germs may be found at the final test. It is obvious that the percentage of carriers recognized on entry is too low and that the figure merely represents the number found by a single examination. No data are available to permit of the formation of an estimate as to what proportion of carriers may be recognized by one examination and what number by two. Since so many carriers are present in the drafts, it would appear to be more advantageous to make two or more tests of men coming into the dépôt. In this way the number of infected persons free in the dépôt would be diminished and the conveyance of infection to others lessened.

The monthly figures show that the proportion of carriers found in each month increased from 2% to 7% at entry and from 5% to 20% among drafts from December to June. Of the carriers the greater number revealed diplococci at one examination. Others yielded the microbes on five, six, seven or nine occasions, though with some intermittency. Chronic carriers who do not become free of meningococci in three months, are discharged from the service, as they are a permanent danger to their fellows. On board ship they would be still more dangerous, as means are not usually available for their weekly examination and isolation. While the authors express their satisfaction with the results of these examinations and of isolation in preventing an epidemic of cerebro-spinal fever, it is obvious that the large numbers of carriers in the drafts result from infection by those harbouring meningococci but not detected and isolated.

ANTERIOR POLIOMYELITIS.

The disease known as epidemic anterior poliomyelitis or infantile paralysis was shown in 1912 to be due to a virus which invaded the fauces, nasal and buccal cavities, intestines and central nervous system of infected persons. Landsteiner and Popper first determined that the virus could be transferred from infected monkeys to healthy monkeys by injecting emulsions of the spinal cord. This finding was confirmed by Simon Flexner and Lewis. The virus passed through a porcelain filter and was shown to be resistant to the action of drying and glycerine. In 1913 Flexner and Nuguchi succeeded in growing the virus on a specially prepared culture medium and in producing the disease in monkeys from the cultures. The virus consisted in minute globular bodies, coccoid in shape. Notwithstanding a considerable amount of work in connexion with this virus, its nature has not been established and a great deal of discussion has been published concerning the manner in which it may be passed on from human host to human host. Flexner at one time incriminated the fly, *Stomoxys calcitrans*, as the carrier of the virus, but it is now known that the contention was not based on a sound foundation in fact. The suggestion that fleas may act as vectors is also improbable. Numerous observations have been made that a paralytic condition exists in domestic animals in association with outbreaks of the disease in human beings. Flexner has

claimed that anterior poliomyelitis is not transmitted by means of the domestic animals, more especially because he and his collaborators have failed entirely to infect them. A recent suggestion has been thrown out, which, although not supported by conclusive proof, is nevertheless ingenious and should be capable of confirmation or contradiction within a short time. Horace Greeley believes that the virus of anterior poliomyelitis and that of distemper of the domestic animals are closely related.¹ In support of this view he claims to have shown that the virus can be cultivated on a mixture of hydrocele fluid or Loeffler's serum and lime water in nutrient bouillon, and that the growth on this medium is luxuriant. A sporulating bacillus, capable of liquefying Loeffler's medium, is readily obtained, although he states that many generations are necessary before the complete transformation of the coccoid form into the bacillary form takes place. The bacillus shows bipolar staining, and he regards this form as the fully developed organism. He found more difficulty in reducing the bacillus into the coccoid form than the converse. He had no difficulty in infecting dogs and cats with this organism, and even guineapigs and rabbits were found to be susceptible to it. The cultures prepared from the nares and nasal discharges of three dogs suffering from distemper, were indistinguishable from those of the virus of poliomyelitis on his special medium. In addition, he has attempted to establish the specificity of the bacillary form by testing the agglutination reaction against immune sera in domestic animals and also against the sera of persons suffering from poliomyelitis. The same sera yielded a definite agglutination reaction with the cultures of the distemper bacillus. Should these contentions prove to be true, there would be a reasonable prospect of controlling the disease by adequate measures adopted against domestic animals suffering from distemper.

THE JUBILEE SANATORIUM, DALBY.

Dr. King Patrick, the Visiting Medical Officer, has issued his annual report on the work done in the Jubilee Sanatorium, Dalby, Queensland, during the year ending June 30, 1917. At the beginning of the year 62 patients were already under treatment. During the 12 months 140 fresh patients were admitted, and at the end of the year 52 were still undergoing treatment. Six patients died, and 144 were discharged. Of these, 14 were found to be suffering from non-tubercular conditions, including asthma, bronchitis, pleurisy, pharyngitis, laryngitis and dyspepsia. In addition, four persons described as "contacts" were admitted, three of whom were said to have been pre-tubercular and one non-tubercular. There were, consequently, 132 persons admitted during the year suffering from tubercular disease. Of these, 32 were regarded as being in Class I. In 17 of these patients the disease was arrested, in nine some improvement was obtained, and in six the condition remained *in statu quo*. The patients belonging to Class II numbered 33. In one only was the disease arrested, in 25 there was some improvement and in seven there was none. In 66 of the patients the disease had reached the third stage or class. It was said to have been arrested in one. In 19 patients improvement followed, in 24 the condition remained stationary, in 16 the disease progressed, and in six it terminated fatally. In addition, there was one patient who was suffering from tubercular infiltration of the bronchial glands. Improvement was achieved in this case. In 11 of the pa-

¹ The Journal of Laboratory and Clinical Medicine, July, 1917.

tients belonging to the third class, and in one belonging to the second, the pulmonary tuberculosis was complicated with other conditions. In six cases the complication was tubercular laryngitis; in two it was pneumothorax; in one it was tubercular disease of the spine and malaria; in one it was empyema; in one it was a cardiac affection, and in one it was pregnancy. Dr. King Patrick sets up another table to show the result of treatment in uncomplicated cases. In this table military patients, those who left the Sanatorium on their own account before the course of treatment was completed, and those that were discharged for insubordination, are excluded. The disease was arrested in 17 out of 25 patients in Class I., in one out of 26 patients in Class II., and in one out of 49 cases in Class III. The average residence of patients who were discharged with their disease arrested, was 172 days, the longest being 287 days and the shortest 64 days. The average increase in weight among these patients was 9.3 kilograms.

The treatment adopted comprised rest and graduated exercises and tuberculin in a series of 19 patients. The form of tuberculin used was P.T.O. in all cases, O.T. in all but one case, P.T. in two cases and B.E. in one. Fifteen of the 19 patients received up to 1 c.cm. of P.T.O.; the remaining four received maximum doses varying from 0.1 to 0.8 c.cm. The largest maximum dose of O.T. was 1 c.cm., and the smallest 0.07 c.cm. One patient received up to 0.2 c.cm. of P.T., and another up to 0.5 c.cm. In the only case in which the bacillary emulsion was used, the maximum dose given was 0.2 c.cm. Tubercle bacilli were present in the sputum of 16 patients, on admission. At the time of discharge they had disappeared from the sputum of three patients. The disease is said to have been arrested in four of the 19 patients.

In addition, artificial pneumothorax and pneumosan were employed in the treatment. Dr. King Patrick does not commit himself in the report in regard to the value of these remedies.

He emphasizes the need of a careful selection of patients for admission, and advocates that every patient, before being received into the Sanatorium, should be examined carefully by an expert. In this way only can unsuitable cases be excluded. Advanced cases should not be admitted, as the presence of these patients has a detrimental influence on persons suffering from early forms of pulmonary tuberculosis. In addition, the occurrence of death has a very depressing effect on consumptives. In a similar manner, the diagnosis of tuberculosis should be confirmed before the patient enters the Sanatorium, as inconvenience and expense attends the admission of persons who are not infected with this disease.

Certain patients are being housed in tents and kept under constant medical supervision from the Sanatorium, after actual discharge. They are required to perform a certain amount of productive work. The meals of these persons are supplied from the Sanatorium. In addition to this arrangement, which is supposed to represent the nucleus of a farm colony for ex-patients, the Sanatorium Farm is utilized as a therapeutic measure.

In conclusion, Dr. King Patrick refers to the valuable work which his predecessor, Dr. A. Stewart, carried out for the Institution, and records the fact that everyone connected with the Sanatorium recognized the earnestness of his endeavours for its welfare.

Public Health.

NEW SOUTH WALES.

The following notifications have been received by the Department of Public Health, New South Wales, during the week ending December 8, 1917:—

Disease.	Metropolitan District.		Hunter River District.		Rest of State.		Total.	
	Cs.	Dths.	Cs.	Dths.	Cs.	Dths.	Cs.	Dths.
Enteric Fever	6	2	2	0	11	1	19	3
Scarlatina	9	0	1	0	6	0	16	0
Diphtheria	49	2	3	0	25	0	77	2
C'bro-Spl. Menin.	2	0	0	0	0	0	2	0
* Pul. Tuberculosis	23	7	0	1	0	0	23	8

* Notifiable only in the Metropolitan and Hunter River Districts, and, since October 2, 1916, in the Blue Mountain Shire and Katoomba Municipality.

One case of variola has been notified from Kurri Kurri.

VICTORIA.

The following notifications have been received by the Department of Public Health, Victoria, for the week ending December 9, 1917:—

Disease.	Metropolitan.		Rest of State.		Total.	
	Cs.	Dths.	Cs.	Dths.	Cs.	Dths.
Diphtheria	42	3	23	0	65	3
Scarlatina	27	0	15	0	42	0
Enteric Fever	2	0	5	1	7	1
Pulmonary Tuberculosis	23	9	18	6	41	15
Poliomyelitis	2	—	0	—	2	—

QUEENSLAND.

The following notifications have been received by the Department of Public Health, Queensland, during the week ending December 8, 1917:—

Disease.	No. of Cases.
Diphtheria	25
Enteric Fever	21
Erysipelas	2
Pulmonary Tuberculosis	22
Scarlatina	7
Ankylostomiasis	1

SOUTH AUSTRALIA.

The following notifications have been received by the Central Board of Health, Adelaide, during the week ending November 24, 1917:—

Disease.	Adelaide.		Rest of State.		Totals.	
	Cs.	Dths.	Cs.	Dths.	Cs.	Dths.
Pulmonary Tuberculosis	2	0	18	4	20	4
Diphtheria	2	0	16	1	18	1
Pertussis	0	0	12	0	12	0
Enteric Fever	0	0	2	0	2	0
Erysipelas	0	0	1	0	1	0
Favus	0	0	1	0	1	0

TASMANIA.

The following notifications have been received by the Department of Public Health, Tasmania, during the week ending December 8, 1917:—

Disease.	Hobart. Cases.	Launceston. Cases.	Country. Cases.	Whole State. Cases.
Pulmonary Tuberculosis	0	0	2	2
Diphtheria	1	2	9	12
Enteric Fever	1	0	0	1
Puerperal Fever	1	0	0	1

THE HEALTH OF BROKEN HILL.

The Medical Officer of Health of Broken Hill, in his report covering the quarter ended September 30, 1917, confines himself to a statistical record of the births, deaths and prevalence of infective diseases. The calculations are made on an estimated population of 30,000. During the quarter, 305 births were registered, which is equivalent to an annual birth-rate of 43.23 per 1,000 of population. He suggests that this is a record for any municipality in the State. The number of deaths registered was 104, which is equivalent to an annual death-rate of 13.86. During the corresponding quarter of 1916, the equivalent death-rate was 15.14. Of the 106 persons who died, 14 were under one year of age. The infantile death-rate was consequently 43.08 per 1,000 births, an exceptionally low figure. In the corresponding quarter of 1916, it was 75.13.

The number of cases of enteric fever notified during the quarter was eight, and there was one death from this cause. During the same quarter of 1914, 1915, 1916, the number of cases was 24, 14 and eight respectively. In the quarter under review, 59 cases of diphtheria and four deaths were registered. In the third quarter of 1916 there were 133 cases and six deaths. Only 15 cases of scarlatina were notified, and two of epidemic cerebro-spinal meningitis. One of the latter proved fatal. The incidence of scarlatina appears to be just under the average. A short summary is appended of some of the principal causes of death. The summary is not sufficiently detailed to justify any deductions being drawn.

Abstracts from Current Medical Literature.

PATHOLOGY

(216) Infection With Poliomyelitis.

E. Taylor and H. L. Amoss have traced the path of infection by the virus of poliomyelitis and demonstrated the rôle played by carriers in the spread of this disease (*Journ. Exper. Medicine*, November, 1917). They have shown that the infection passes from a patient with acute poliomyelitis to a contact carrier and thence to a second person developing the disease. A young man, aged 16 years, lived in a village in which no cases of poliomyelitis had occurred. On June 2, 1917, he visited a town, situated 18 miles away, where cases of poliomyelitis had been observed. In the town he had a meal, but did not come into contact with any person known to have the disease. On June 12, 1917, he became ill. Extensive paralysis set in on June 16, and he died the same day. The family of this patient consisted of father, mother, a young sister and two younger brothers. On the day on which the patient died, nasopharyngeal irrigations were given to the sister and one brother. The irrigations were composed of distilled water. Ether was added to the fluid, which was sent at once to the laboratory. These liquids were shaken with glass beads and passed through a Berkefeld filter. They were then concentrated to small bulk by evaporation *in vacuo*. Monkeys were injected with each of these liquids. The time elapsing between the injections and the collection of the washings was six hours. Both monkeys developed the disease about a fortnight after the inoculations. Another monkey was infected from one of these diseased monkeys, and developed poliomyelitis. The boy had not been away from the village in which he lived, but had a slight attack of illness on the day after his brother commenced to be ill. The sister became ill on June 21 and subsequently developed partial paralysis of the left deltoid, right anterior tibial and abdominal muscles. She therefore suffered from a mild attack of poliomyelitis. These two children were next tested to ascertain whether their nasal washings could neutralize the virus of poliomyelitis, but the washings failed to prevent the infection of a monkey inoculated with an emulsion of a stock glycerolated poliomyelitic spinal cord. The youngest boy, aged 7 years, was refractory, and no washing could be obtained from his nasopharynx. On June 18 he complained of illness. Lumbar puncture yielded a fluid containing 500 leucocytes per cubic centimetre and an excess of globulin. Immune serum from recovered patients suffering from poliomyelitis was administered. Recovery was prompt with slight paralysis of the right anterior tibial muscle. Nasopharyngeal washings were taken from this patient

on September 24 and injected into a monkey. The monkey remained well. The authors conclude that every case of poliomyelitis develops from a carrier of the microbic cause or virus of poliomyelitis.

(217) Fasciolopsinæ from China.

N. W. Worth has examined 188 specimens of flukes sent to him from Shaohsing, Chekiang Province, China (*Johns Hopkins Hosp. Bull.*, October, 1917). He has found that these flukes can be divided into two groups. In the first group are placed the long flexible flukes with irregular contours and conspicuous vitellaria and in the second group the specimens are more elliptical, smooth and with more prominent ventral suckers. Later it was found that the flukes of the second group are possessed of cuticular spines. Of the total number, 105 possessed spines and 83 were smooth. Detailed descriptions are given of the morphological characters of each group of flukes. The smooth flukes have been identified as *Fasciolopsis buski*, while the spined form is recognized as a new species under the name of *F. spinifera*. An extended table is appended, setting out in detail the different characters of the various flukes found in man. Photographs of different flukes and of preparations of flukes are given.

(218) Periodicity of Microfilaria Nocturna.

W. Yorke and B. Blacklock have made a careful study of the periodicity of the occurrence of *Microfilaria nocturna* in the blood of the cutaneous vessels and in the urine (*Annals Trop. Med. Parasitology*, August, 1917). The patient was an Australian soldier infected in Queensland. The study has been made in Liverpool. The urine was milky and tinged with blood before the patient left Australia. On admission into hospital the urine contained microfilariae, but none could be found in the blood during the day. The larvæ have been identified as those of *F. bancrofti*. The number of larvæ in the blood of the median basilic vein has been determined and used as a check on the estimations of the number in the cutaneous blood. In the cutaneous blood the number per cubic centimetre of blood has varied from 13,000 at midnight to 50 from 8 a.m. to 4 p.m. The number of larvæ in the venous blood has varied in the same way as the number in the cutaneous blood, but the number of larvæ per cubic centimetre is less. The authors conclude that the passage of the larvæ through the cutaneous vessels is obstructed, so that the larvæ accumulate in these blood vessels. This obstruction does not account for the periodicity of their presence, since in the evening when the number of organisms is increasing, the number in the venous blood is the same as in the cutaneous blood. As, however, the hours pass, the number in the cutaneous blood increases. The authors investigated the reversibility of the periodicity and found that the periodicity could be

changed by altering the hours of sleep. They mention that the periodicity must have changed during the voyage to Europe. The authors find that the time of maximal concentration of the larvæ in the cutaneous blood has only been changed six hours after the time of sleep and activity has been reversed for four days, and that the hours of sleep and activity had to be reversed for 11 days to change the time of maximal concentration from midnight to midday. The number of larvæ in the urine passed at different times of the day and night, showed that microfilariae are always present and no periodicity could be observed in the distribution. As it occurred to the authors that the larvæ might be derived from the blood present in the urine, the amount of blood was estimated. It was then noticed that if the number of microfilariae in the urine was expressed in terms of the amount of blood present in the urine, the same periodicity was observed as in the cutaneous blood. The renal and vesical blood-vessels thus partake in the diurnal distribution of the parasites.

(219) Preparation of Tetanus Toxin.

I. C. Hall describes a stable medium for the production of potent tetanus toxin (*University of California Publications in Pathology*, August, 1917). It has been previously considered axiomatic that the media for the successful culture of anaerobic organisms should be freshly made. The failure of media to support active growth can not be ascribed to slow absorption of oxygen as a second sterilization does not improve the medium. It may be due to a development of acid which occurs in media containing carbohydrates. The author has prepared a medium, composed of beef extract, peptone and dextrose along with magnesium carbonate, which yields very active growth of the *Bacillus tetani* with consequent formation of potent toxin in media, which have been made ten weeks previously. The toxin obtained in this way causes death in guinea-pigs in doses of one ten thousandth of a cubic centimetre. In making this medium the adjustment of the reaction to litmus is brought about automatically by the magnesium carbonate. Magnesium carbonate must be finely divided in order that it mix uniformly through the fluid. The use of the magnesium carbonate permits the addition of a considerable amount of glucose to the medium without giving rise to any excessive development of acid in the medium during the growth of the tetanus bacilli. Without the presence of carbonate the acid formed from the glucose hinders the growth of the bacilli after a few days. The medium gives rise to no abscesses in horses even after repeated injection

PÆDIATRICS.

(220) Hunger in the Infant.

Taylor (*Amer. Journ. Dis. of Children*, October, 1917) conducted a series of experiments with relation to the

gastric factors in the need for food in infants. The major of these factors, the hunger contractions, were studied by means of a rubber balloon, attached to a soft catheter and inserted into the stomach. By means of a manometer, the gastric movements were recorded. The material investigated included five premature infants, 40 full term new-born babies under 3 weeks of age and 11 older babies and one boy of 2 years with a surgically induced gastric fistula. His conclusions are as follows: (1) Hunger contractions are greater in the new-born infant. (2) Still greater hunger contractions occur in premature infants. (3) There is no relation between cyanosis and hunger contractions. (4) Inhibition of the hunger contraction from sensations in the mouth does not occur. (5) Inhibition of the hunger contractions from the mouth in older infants is present only as the result of stimuli, which the babe has learned to recognize as food. It does not occur with substances producing equally strong sensory impressions, which are not considered by the infant as food. (6) Inhibition from the mouth is psychic in character. (7) Reflex inhibition from the presence of food in the stomach is present in infants of all ages. (8) This reflex inhibition from the stomach may be only partially developed in young infants. (9) Successive automatic sucking movements, each sucking act serving as the stimulus for its successor, are present during the hunger state, when the reflex threshold is kept almost constantly low by a rapid succession of hunger contractions. (10) In normally developing breast-fed babies, hunger is not ordinarily an immediate cause of crying. (11) The average time required for the development of hunger in healthy premature infants gaining in weight and receiving a known sufficient amount of food, under one month of age, is one hour and forty minutes, with a maximum of two hours and twenty minutes and a minimum of forty minutes; in full-term infants under two weeks, two hours and fifty minutes, with a maximum of four hours and a minimum of two hours; in infants from two weeks to four months, three hours and forty minutes, with a maximum of four hours and thirty-five minutes and a minimum of three hours and twelve minutes. (12) The time required for the development of hunger in any one infant is fairly constant over a short period of time, provided the amount and kind of food is not changed. (13) The time required for the development of hunger in infants with chronic nourishment disturbance is shorter than in normal infants. (14) The time required for the development of hunger is shorter when the infant receives food which is badly tolerated. (15) Hunger contractions occur in these infants long before the stomach has emptied itself, consequently their presence is not in itself an indication that the stomach is ready for food. (16) The feeble nursing exhibited by most premature infants and by many older infants is not

due to derangement of the primitive hunger apparatus. Hunger contractions are present and of normal intensity in these infants. (17) Hunger contractions were present in one infant with congenital myxedema. (18) Hunger contractions were present in a two-year-old boy with typhoid fever, when the rectal temperature ranged between 40.2° C. and 40.5° C. (19) Previous findings of increased hunger contractions in infants with pyloric stenosis are confirmed.

(221) Rumination in Infants.

Though rumination in infants is usually looked upon as an extreme rarity, Grulee (*Amer. Journ. Dis. of Children*, September, 1917) considers the condition to be comparatively frequent, and urges the necessity for a thorough study of the disease, owing to its high mortality, and of its causation and proper treatment. He reports in detail six cases observed in three years. There are two groups of cases, the mild and the severe. In the former, rumination occurs only once or twice daily, and is not accompanied by any marked loss of food. The severe cases show a nervous, emaciated, pale child, which cries easily and sleeps badly. Food is well taken, but is soon brought up into the mouth, gargled and then re-swallowed. This happens again and again with short intervals between the attacks, with the result that a large amount of the food is lost through "spilling over," so large an amount, perhaps, that the remainder is insufficient to support life. The infants resemble those suffering from marasmus or pylorospasm, and the mortality is from 25% to 50%. As regards treatment, general sedatives, gastric anæsthetics, and the use of well-thickened foods have proved of value in some cases. Gastric lavage seems of little use. The best results have followed on attention to the child's psychic condition, with freedom from any excitement, quiet surroundings, etc. The not infrequent occurrence of duodenal ulcer, as a complication, is probably a sequel rather than a cause of the disease. Pylorospasm appears in a large proportion of these cases, and the author considers that both rumination and pylorospasm are examples of that tendency to spasm, which the circular involuntary muscles of certain susceptible individuals possess. Rumination results from a primary overaction of the circular involuntary muscles of the stomach, food being forced back into the œsophagus and being kept there by spasmodic contraction of the lower end of the œsophagus. With relaxation of these muscles, rumination ceases.

(222) Pertussis Vaccines.

Taking a number of healthy children, who had never had whooping cough, Huenckens (*Amer. Journ. Dis. of Children*, October, 1917) vaccinated them with different pertussis vaccines, in order to study the effect of such treatment on antibody formation, by means of the complement fixation test. Seventeen patients, in three series, were treated in this way. In the first

series of four patients, three were given specially prepared vaccine, one a commercial vaccine, once a week for four weeks. The first two doses were one hundred million bacilli and the last two doses two hundred million. Blood for the test was taken before each injection, and again two weeks after the last injection. All tests were absolutely negative. In the second series of four cases, all the children were given specially prepared vaccine, two hundred million organisms weekly for five doses. Complement fixation tests performed as before were also all negative. In the third and last series, a larger dosage was employed, viz., one half-billion, one billion and two billion bacteria at two day intervals. Of nine cases treated, five received special vaccine and commercial vaccine. Of the former three reacted positively and two gave negative tests; of the latter one was positive and three negative. The ages of the children in this third series ranged from six months to three years. The author concludes that prophylactic vaccination against pertussis is justifiable, but large doses of freshly prepared vaccines should be employed to obtain the required results.

(223) Protein Diet and Human Milk.

With regard to milk production of the lower animals, much excellent work has been done, especially in the case of dairy cows. With these, for economic reasons, the nutritive ratio best adapted to milk production was studied, and was found to be a narrow one, i.e., there should be a high percentage of digestible protein in the ration. As regards quality, it was found that milk proteins had an efficiency for milk production and tissue reservations of about 60%, while corn and wheat showed an efficiency of 40% and 36% respectively. Working on these lines, Hobler (*Amer. Journ. of Dis. of Children*, August, 1917) made a series of experiments on nursing mothers to establish a proper basis for arriving at a diet most suitable for milk production. Not only were diets with varying ratio used, but diets were also fed in which different types of protein predominated. He found that: (1) a nutritive value of 1.6 or narrower seemed best adapted to the needs of nursing mothers. (This ratio refers to the proportion of digestible protein to digestible fat and carbohydrate.) (2) Animal protein was more suitable than vegetable protein in supplying nitrogen for milk and maintenance of nitrogen balance; (3) the protein derived from nuts, when fed with other vegetable protein, was suitable for supplying milk protein and for maintaining nitrogen equilibrium; (4) a diet composed exclusively of cereals, fruits and vegetables did not supply sufficient protein for elaborating milk protein, and caused a severe drain on the tissues of the mother; (5) of the various forms of animal protein, that which was derived from cow's milk, seemed particularly suitable for the production of human milk protein, as well as for the preservation of the maternal tissues.

British Medical Association News.

ANNUAL MEETING.

The Annual Meeting of the Queensland Branch was held on December 7, 1917, Dr. W. N. Robertson, the President, in the chair.

The Annual Report of the Council was read and adopted.

Annual Report of Council for Year 1917.

Members at 30th November, 1916	271
New Members	6

Transferred to Branch	277
Transferred from Branch	13

Transferred from Branch	290
Resigned	9

Resigned	281
Died	3

Died	278
Struck off	2

Struck off	276
Struck off	1

The following meetings were held during the year:—

	Ordinary.	Special.
General Meetings	11	4
Council Meetings	12	5

December 8, 1916: Annual Meeting, 18 members present. Dr. Robertson, President, made some remarks upon the year's events and progress. The Branch now held 430 shares in the Queensland Medical Land Investment Company, Limited, and had the use of the meeting room practically rent free. Council's report and Honorary Treasurer's Financial Statement and election of officers for 1917. Discussion on Dr. King Patrick's paper, "The Administrative Control of Pulmonary Tuberculosis in Australia."

December 15: Special Meeting, 9 members present. Meeting called to consider fees for certificates for assurance having particular reference to the State Insurance Act. Resolved: that the President, Honorary Secretary and Dr. Kerr Scott wait upon the Commissioner and point out objections to the Act. Fees for Life Assurance certificates considered, and resolved that the fee for all cases of examination for life assurance be not less than £1 1s.

January 12, 1917: Special Meeting, 11 members present. Meeting called to consider Opticians' Bill. Protest passed against opticians being registered as sight testers.

February 2: Monthly Meeting, 17 members present. Paper by Dr. Kerr Scott, "The Modern Management of Labour." Dr. Lockhart Gibson appointed representative of the Branch on the Federal Committee of Branches and on the Committee of the Australasian Medical Publishing Company in place of Dr. Love, resigned.

March 2: 17 members present. Paper, "Early Diagnosis of Pulmonary Tuberculosis from a Public Health point of view," by Dr. A. Stewart.

April 4: Special Meeting, 38 members present. Meeting called to discuss the situation brought about by the action of the Government in nationalizing the Brisbane General Hospital. Resolved to take no action at present.

April 13: Monthly Meeting, 30 members present. Discussion on a letter from the New South Wales Branch re A.A.M.C.; equality of obligation to serve. Decided to adopt a similar course to that of New South Wales Branch. Discussion on nationalization of the profession. Resolutions carried unanimously at the last Sydney Session of Congress and unamended at the Auckland Session re hospital management carried unanimously. A.N.A. request from A.N.A. to receive deputation from them. Resolved not to receive such deputation. Paper by Dr. H. J. Stewart, "Personal experience and clinical observations with the 3rd A.G.H. at Lemnos and Egypt."

May 4: 22 members present. Consideration of rule re advertising, commencement of practice, etc. Resolved to obtain copies of rules of all Australian Branches and

amend the Queensland rules so as to conform with other Branches' rules. Paper by Captain Allan, "Experiences in Mesopotamia."

June 1: 19 members present. Drs. Halford, McKillop and Thelander appointed a Sub-committee to deal with country hospitals. Discussion on Dr. Stewart's paper, "Personal Experiences and Clinical Observations with the 3rd A.G.H. at Lemnos and Egypt." Paper by Dr. Graham Brown, "The Early Operative Treatment of Chronic Discharge from the Middle Ear (Otorrhoea), Heath's Early Conservative Mastoid Operation."

July 6: 26 members present. Resolutions re gratuitous attendance on lodge members and others who have gone to the war re-affirmed. Papers, "Rough Notes on some Recent Surgical Cases," by Dr. McKillop, and "Relationship of Opticians to the Profession and the Public," by Dr. Lockhart Gibson.

July 13: Special Meeting, 18 members present. Meeting called to discuss Dr. Gibson's paper, "Relationship of Opticians to the Profession," and notice of motion by Sir David Hardie re editorial in Australian Journal of the 2nd June, 1917, re Dr. Gibson's paper. Resolved to send circular protesting against Opticians' Bill to every member of the Legislative Council and Assembly, and stating that no British Medical Association member could sit on the Board if the Bill passed in its present state.

August 3: 23 members present. Paper, "Clinical Treatment of Syphilis in the Australian Army," by Captain H. H. Griffith, and "The Diagnosis, Prophylaxis and Treatment of Plumbic Ocular Neuritis," by Dr. Lockhart Gibson.

September 7: 19 members present. Dr. McKillop's motion re registration of legally qualified medical practitioners throughout Australia being placed upon a uniform basis. Resolved: that the Federal Committee take the matter in hand. Resolved: that the resolution passed in 1914 re enforcement of Common Form of Agreement without financial clauses be re-affirmed.

October 5: 20 members present. Discussion on Captain Griffith's paper, "Clinical Treatment of Syphilis in the Australian Army," and on Dr. Lockhart Gibson's paper, "The Diagnosis, Prophylaxis and Treatment of Plumbic Ocular Neuritis."

November 2: 14 members present. Dr. Lockhart Gibson read a paper entitled "Notes on the Use of the Giant Magnet."

We have to record with deep regret the death of Dr. Harding, Rockhampton, and Dr. Henderson, who died of wounds received in France while on active service.

List of Members who are on Active Service Abroad.

Ahern, E. D., Brisbane.	Kelly, W. R., Charters Towers.
Avery, J. G., Roma.	Lilley, C. M., Brisbane.
Brockway, A. B., Brisbane.	Macdonald, A. J., Laidley.
Brown, E. E., Ipswich.	Macdonald, John, Ipswich.
Brown, Elizabeth, Rockhampton.	McKillop, A., Dalby.
Brydon, A. G., Pittsworth.	Marks, Alex., D.S.O., Brisbane.
Bourne, E. E., Brisbane.	Mansfield, T. M., Brisbane.
Butler, A. G., D.S.O., Brisbane.	Meyers, E. S., Brisbane.
Cameron, D. A., Brisbane.	Millett, W. L., Mareeba.
Cameron, G. H., Brisbane.	Murphy, J. A. R., Brisbane.
Chenoweth, T. O., Mackay.	Morlet, J., Brisbane.
Clowes, A. S., Brisbane.	Nisbet, A. T. H., Townsville.
Cooper, L. V., Brisbane.	Power, J. J., Brisbane.
Conrick, H. V., D.S.O., Brisbane.	Quilty, W. D., Brisbane.
Croll, D. G., Brisbane.	Reye, A. J., Brisbane.
Culpin, E., Brisbane.	Roe, A. S., Brisbane.
Dixon, G. F., Brisbane.	Ross, T. G., D.S.O., Townsville.
Dolman, E. W. P., Gattton.	Sale, J. G., Ilfracombe.
Douglas, A. C. G., Brisbane.	Smyth, J. S., Warwick.
Duhig, J.V.J., Ipswich.	Sutton, A., C.M.G., Brisbane.
Elwell, L.S., Stanthorpe.	Sutton, M.G., Brisbane.
Francis, R. P. W., Brisbane.	Thomson, E. G., Rockhampton.
Follitt, H. H. B., Maryborough.	Thomson, R. M., Rockhampton.
Foxton, H. V., Ipswich.	
Fraser, W. A., Harrisville.	
Gallagher, M. J., Brisbane.	

Griffith, H. H., Brisbane. Tilling, H. W., Goondiwindi.
 Hardie, John, M. C., Brisbane. Turner, A. J., Brisbane.
 Hawkes, C. S., Brisbane. Weedon, C. J., Brisbane.
 Hill, C. F., Brisbane. Willis, V. N. B., Brisbane.
 Howard, A. J., Brisbane. Wilson, J. P., Springsure.
 Huxtable, R. B., D.S.O., Vernon, G. H., Winton.
 Charters Towers. Wooster, E. C., Rockhampton.

During the year the following members returned from active service: Dr. Croll (on a visit), Drs. Russell, Graham Brown, Espie Dods, M.C., D.S.O., Butcher, Hill, Hurrey, McLean, D.S.O., McReddie, J. E. F. Macdonald, Alcorn (now in New South Wales), Forde, Tucker and McDowall.

During the year a new bookcase of silky oak and glass doors was added to the room, the old bookcases being disposed of by auction. The present bookcase occupies the whole length of the room, and is 5 ft. 6 in. high, so each book is easily taken out. The books have been classified and a catalogue of them compiled which should prove a boon to members.

Dr. Lockhart Gibson presented to the Library *The Lancet* for the year 1909, which was missing. The volume has been bound and placed in the bookcase, and thus completes *The Lancet* from 1845 to date.

Dr. H. J. Stewart presented to the Branch three framed pictures of the 3rd Australian General Hospital at Lemnos, which have been hung in the meeting room of the Branch.

A ballot was taken re war emergency organization, resulting in 111 being in favour of the Federal Committee requesting the Federal Government to pass legislation to bring about compulsory enlistment of the medical profession in Australia for service in the Australian Imperial Force (including service overseas), 19 voting against such action being taken.

A Sub-Committee to deal with country hospital matters was appointed, the members being Dr. Halford, Dr. McKillop and Dr. Thelander. The Sub-Committee is drawing up a common form of agreement to be entered into between the hospitals and medical officers.

A Sub-Committee, being Dr. Robertson (President), Dr. McKenna, Dr. Kerr Scott, Dr. Hemsley (Honorary Secretary) and Dr. Espie Dods were appointed to revise the Rules of the Branch. Draft of amended Rules is before the meeting for consideration.

The Editor of *The Medical Journal of Australia* paid a visit to Brisbane in July. He was entertained at dinner by the members of the Council and afterwards attended the Council meeting.

Since the last Annual Meeting, the Branch bought Dr. Elkington's 50 shares in the Queensland Medical Land Investment Company, Limited, making 480 shares held by the Branch at present, which return a dividend of £12. The rent charged the Branch by the Company is £12 per annum, so that now the Branch has its rooms free, only paying half expenses for cleaning and watchman.

The balance sheet and financial statement were presented and adopted. (See page 528).

Office-bearers.

The result of the election of office-bearers and members of the Council was announced as follows:—

President: Dr. J. Espie Dods.

Vice-President: Dr. W. N. Robertson, Dr. E. W. Kerr Scott.

Honorary Secretary: Dr. J. C. Hemsley.

Honorary Treasurer: Dr. H. Bourne.

Honorary Curator of Library: Dr. T. H. R. Mathewson.

Honorary Curator of Museum: (Vacant).

Members of Council: Drs. A. M. McIntosh, T. R. McKenna, Andrew Stewart and J. M. Thomson.

Honorary Auditors: Dr. A. B. Carvosso and Dr. J. L. Selwood.

Dr. W. N. Robertson and Dr. J. Lockhart Gibson were re-appointed members of the Federal Committee of the British Medical Association in Australia and members of the Australasian Medical Publishing Company, Limited.

Presidential Address.

Dr. W. N. Robertson, the retiring President, read an address (see page 511).

Dr. J. Lockhart Gibson moved a hearty vote of thanks

to Dr. Robertson for his address. He considered that the suggestions for the establishment of a fund to assist members absent at the front was a good one.

Dr. R. Graham Browne seconded the motion, which was carried by acclamation.

Induction of President.

Dr. W. N. Robertson, the retiring President, vacated the chair in favour of Dr. J. Espie Dods. Dr. Dods thanked the members for electing him President immediately after his return from the front. He regarded it as a token that the members wished to honour the men who had gone to the front. He also thanked Dr. Robertson for his address. It contained much to stimulate the new Council.

Branch Rules.

The amended rules, as drafted by the Sub-committee appointed for the purpose, were submitted for approval. A few minor amendments were embodied, and the rules adopted.

Compulsory Reinforcements.

Dr. J. Lockhart Gibson moved that the Queensland Branch affirm its approval of the action of the Federal Government to reinforce the troops at the front. Colonel L. MacDonnell seconded the motion, which was carried unanimously.

The following have been elected as members of the New South Wales Branch:—

Thomas Yeates Nelson, M.B., Ch.M., 1917 (Univ. Sydney), Sydney Hospital.

William Francis Digges La Touche, M.B., Ch.M., 1917 (Univ. Sydney), Royal Prince Alfred Hospital, Camperdown.

George Jacob Maxwell Saxby, M.B., 1917 (Univ. Sydney), Sydney Hospital.

Norman William Kater, M.B., Ch.M., 1898 (Univ. Sydney), "Rathven," St. Mark's Road, Randwick.

Edwin Walter Fitzpatrick, M.B., Ch.M., 1917 (Univ. Sydney), Sydney Hospital.

Leslie Ewart Senis Larbalestier, M.B., Ch.M., 1917 (Univ. Sydney), Sydney Hospital.

Gordon Charles Wesley Holmes, M.B., Ch.M., 1917 (Univ. Sydney), Sydney Hospital.

Michael Oswald Stormon, M.B., Ch.M., 1917 (Univ. Sydney), Sydney Hospital.

Dudley Stewart Small, M.B., 1917 (Univ. Sydney), Sydney Hospital.

Frederick Hilton Wallace, M.B., Ch.M., 1917 (Univ. Sydney), Sydney Hospital.

Percival George Crago, M.B., Ch.M., 1917 (Univ. Sydney), Sydney Hospital.

Frank Eric Raymond Biggs, M.B., 1917 (Univ. Sydney), Sydney Hospital.

The undermentioned has been nominated for election as a member of the New South Wales Branch:—

Elma Linton Sandford, M.B., Ch.M., 1917 (Univ. Sydney), Royal Alexandra Hospital for Children, Camperdown.

THE TRAVELLING LIST OF THE VICTORIAN BRANCH.

The Council of the Victorian Branch of the British Medical Association has received complaints from some members on active service abroad that they have been charged their subscriptions during their absence, and further that they have not received copies of the *British Medical Journal* and *The Medical Journal of Australia* regularly.

When the first medical contingent left Australia the Council decided to take steps to discontinue the supply of the two Journals, save in those cases in which members on active service asked for them to be sent. This arrangement gave immediate dissatisfaction. The Council therefore notified the offices in London and Sydney that the two Journals should be sent to all the members of the Victorian Branch on active service abroad whose addresses were forwarded by the Secretary. The Council gave members on active service the option of having their names placed on

Statement of Receipts and Payments.			
Receipts.			
Dec. 2, 1916—			
To Credit Balance Bank of Queens-	£	s. d.	£ s. d.
land, Brisbane	100	4 11	
" Credit Balance Government			
Savings Bank, Brisbane ..	92	16 10	
			193 1 9
" Cash on hand			5 17 1
Nov. 26, 1917—			
Subscriptions—			
British Medical Association,			
London	221	11 0	
<i>The Medical Journal of Australia</i>	209	0 0	
Queensland Branch Subscrip-			
tions	98	3 9	
Organization Fund	193	17 6	
Queensland Branch Subscrip-			
tions, 1918, paid in advance	0	11 6	
			723 3 9
" Library and Bookcases—			
Sale of Bookcases			19 9 0
" Queensland Medical Land In-			
vestment Co., Ltd.—			
Dividend	10	15 0	
" Queensland Government Sav-			
ings Bank, Interest to June			
30 1917	3	8 3	
			14 3 3
			£955 14 10

For Twelve Months Ending November 26, 1917.			
Payments.			
Nov. 26, 1917—			
By British Medical Association,			
London	211	1 0	
" <i>The Medical Journal of Australia</i> ..	202	0 0	
			413 1 0
" Library and Bookcases—			
Purchase of New Bookcases..	57	10 0	
Bookbinding	14	19 0	
Preparing Catalogues, etc. ..	7	7 0	
			£ s. d.
<i>Journal of Tropical Medi-</i>			
<i>cine</i> , 1917	0	18 0	
<i>Journal of Tropical Medi-</i>			
<i>cine</i> , 1918	0	18 0	
<i>The Lancet</i> , 1918	1	12 6	
<i>Medical Annual</i>	0	12 6	
Books from Angus and			
Robertson	2	11 4	
			6 12 4
			86 8 4
" Queensland Medical Land Investment Co.,			
Ltd.—			
Purchase of 50 Shares			25 0 0
" Secretary's Salary and Bonus ..	109	0 0	
" Relieving Secretary	8	0 0	
" Printing and Stationery	21	5 10	
" Electric Light	13	18 8	
" Bank Charges and Cheque Books	2	6 4	
" Postage and Duty Stamps, Tele-			
grams, etc.	17	5 1	
" Rent	12	0 0	
" Cleaning	12	3 0	
" Night Watchman	3	5 0	
" Telephone	9	14 1	
" Insurance on Furniture	1	10 0	
" Removing Bookcases	3	7 6	
" General Expenses	10	15 11	
			224 11 5
" Credit Balance Bank of Queens-			
land, Ltd., Brisbane	97	5 11	
" Credit Balance Government Sav-			
ings Bank, Brisbane	107	0 1	
			204 6 0
" Cash on Hand			2 8 1
			£955 14 10

Brisbane, 30th November, 1917.

Audited and found correct.

ROY G. GROOM, Auditor.

Balance Sheet, 26th November, 1917.			
Liabilities.		Assets.	
	£ s. d.		£ s. d.
Accumulation Fund	693 15 7	Library	150 0 0
British Medical Association, London—		Bookcases	57 10 0
Members' Subscriptions Col-		Furniture and Fittings	60 0 0
lected, but not remitted by		Queensland Medical Land Invest-	
Branch at close of Financial		ment Co., Ltd., 480 shares paid	
Year	£17 17 0	10s. per share	240 0 0
<i>The Medical Journal of Australia</i> —		Museum Specimens	5 0 0
Subscriptions collected, but not		Credit Balance Bank of Queens-	
remitted by Branch at close		land, Ltd., Brisbane	97 5 11
of Financial Year	7 0 0	Credit Balance Queensland Govern-	
		ment Savings Bank, Brisbane..	107 0 1
Branch Subscriptions for 1918 paid		Cash on Hand	2 8 1
in advance	0 11 6		719 4 1
			£719 4 1
	£719 4 1		£ s. d.
Subscriptions owing on November 26, 1917, by		Subscriptions owing on November 26, 1917, by	
Members not on Active Service—		Members on Active Service—	
British Medical Association, London ..	18 18 0	British Medical Association, London ..	56 14 0
Branch Subscriptions	8 11 0	Branch Subscriptions	26 10 6
Organization Fund	18 15 6	Organization Fund	39 18 0
<i>The Medical Journal of Australia</i>	19 0 0	<i>The Medical Journal of Australia</i>	54 0 0
	£65 4 6		£177 2 6

Brisbane, 30th November, 1917.

Audited and found correct.

ROY G. GROOM, Auditor.

the "travelling list." This implies a temporary suspension of the liability to pay subscriptions. Members whose names are on the "travelling list," become ordinary members again automatically on their return to Victoria, and their subscriptions date from the half-year nearest to the date of their return.

In the event of a member not electing to have his name placed on the "travelling list," a subscription of £2 12s. 6d. per annum is charged while he is on active service abroad. The Council points out that, were the names of the 200 or more members on active service placed on the "travelling list," the Branch would be unable to meet its liabilities. The activities of the Branch are maintained both for the members at home and for those on military service.

LINNEAN SOCIETY OF NEW SOUTH WALES.

A meeting of the Linnean Society of New South Wales was held at the Linnean Hall, Ithaca Road, Elizabeth Bay, on November 28, 1917, Dr. H. G. Chapman, the President, in the chair.

Dr. H. S. H. Wardlaw, Linnean Macleay Fellow of the Society in Physiology, read a paper on "The Variability of the Composition of Cows' Milk." He presented the results of a series of complete analyses of samples of milk from individual cows. The cows examined were not chosen for any special qualities, but they were members of selected herds not kept for profit. They were supplying milk used for human consumption and were all milked under the same conditions as regards time of milking and period since last milking. The cows had not been subjected to any change of diet for some weeks previous to the examination of their milk. The samples were collected over three seasons of the year from October to April. The samples of milk, 109 in number, were obtained from cows kept in the dairies attached to the State Mental Hospitals in the vicinity of Sydney. The author was indebted to the courtesy of Dr. Eric Sinclair, Inspector-General of the Insane, for placing every facility at his disposal in collecting the samples. The cows were in most cases crossbred, and the predominating strain was stated for each cow. The age of the cows and the number of calves borne were noted. The date of the birth of the last calf was ascertained. The weight of food given to the cows was recorded. The cows were fed on pollard, bran, green chaffed barley, green chaffed oats, lucerne hay or cow-meal. The cows were milked twice daily, the morning milking occurring between 6 a.m. and 7 a.m. and the evening milking between 3 p.m. and 4 p.m. The weights of milk obtained at each milking were measured. The yield at the morning milking was approximately twice that of the evening milking. The cows were milked by hand and no attempt was made to strip the udders.

The whole of the milk from each milking was mixed by pouring from one vessel to another six times, and the sample was taken by diverting a portion of the stream into the sampling bottle while the milk was poured into the container. In this way a sample was collected from all portions of the mixed milk. The total quantity of milk was weighed on a spring balance. The samples analysed were all taken at the afternoon milking. The analyses were commenced on the same day and were completed before the milk was 24 hours old. Estimations were made of the density, freezing point, electrical conductivity, total solids, fats, lactose, ash and proteins along with extractives. Determinations were also made of the amounts of the various constituents secreted in the period from the last milking, which was eight hours. The density was measured by weighing 25 c.cm. in a pycnometer and calculating the density at 25° C. The freezing points were determined to 0.002° C. The electrical conductivities were estimated at 25° C. with a telephone and a Wolff's pattern Wheatstone bridge. The conductivity vessel had vertical electrodes. The total solids were measured by evaporating one cubic centimetre at 102° C. in a glycerine oven. The fats were determined by the method of Röse modified by Gottlieb. The lactose was estimated by precipitating the proteins with ammonia sulphate and by reading the rotation of the filtrate in a polarimeter, as recommended by Salkowski. The ash was determined after heating the dried residue in a muffle at dull red heat. The results of the analyses were set out in extended

tables which gave all the particulars for each sample. The following are the mean values of the determinations: freezing point, 0.563° C.; density, 1.0297; electrical conductivity, 4.55×10^{-3} reciprocal ohms; total solids, 13.55%; fats, 5.0%; lactose, 4.9%; solids not fats, 8.6%; ash, 0.69%; proteins and extractives, 2.9%; and weight of milk at a milking, 3.7 kilos.

Dr. Wardlaw said that milk varied in the relative proportions of its constituents in the same way as all products of living things. Without an adequate knowledge of its variability, a precise statement of its composition could not, therefore, be made. The cows were kept under similar conditions, but were sufficiently different in regard to breed, age and stage of lactation as to yield representative results. When the individual results were examined, the variability of the different measurements was found to fall into four distinctly separated groups. The freezing point or osmotic pressure and the density were the least variable qualities. The whole of the results lay within a range of 5% on either side of the mean values. The electrical conductivities and the concentrations of lactose and of ash-forming substances were rather more than twice as variable. About 50% of the results lay within 5% of the mean values, and the total number of results spread over a range of 25% on either side of the mean values. The concentrations of fats and of proteins were still more variable. Only 20% of the results lay within 5% of the mean values, while the total number of results were distributed over a range of 50% on either side of the mean values. The amounts of the different constituents of the milk produced by the cows in a given time, were the most variable. Less than 10% of the results lay within 5% of the mean value, while the total number of the results were spread over a range of more than 100% on either side of the mean values. The variability of the different measurements thus ranged from practical constancy, in the case of the freezing point and density, to an almost random variation, in the case of the amounts of substances secreted in a given time. The variation of the composition was intermediate between these extremes, but the concentration of soluble matter in the milk varied much less than the concentration of the matter in suspension.

It was interesting to notice that, while only 3% of the samples contained percentages of fats lower than the legal standard under the *Pure Foods Act* of New South Wales, over 40% of the samples contained percentages of solids-not-fats below the legal standard. The mean value for the solids-not-fats, 8.6%, obtained for the whole of the samples lay only slightly above the legal standard, 8.5%. The effect of mixing the samples on the percentage of solids-not-fats was marked. When the milk from 11 or 12 cows was mixed, it was found that the mixed milk was below the standard in only one out of nine mixed specimens from the 109 individual cows. The mixing of the milk from such small numbers of cows as those examined, reduced the likelihood of the milk falling below the standard about four times. Although Dr. Wardlaw had examined the effects of breed, age of the cow and stage of lactation on the composition of milk, the only distinct effect of these factors that he had found, was upon the yield of milk. Cows in the later stages of lactation give less milk than those in the earlier stages. By the seventh month cows were only producing one half as much milk as when they started milking.

The President, Dr. H. G. Chapman, discussed the communication. He stated that the Royal Commission of Inquiry as to Food Supplies and Prices in its sectional report on the supply and distribution of milk had reported, in 1913, that the law with regard to the milk standard required amendment. Owing to the wording of the *Pure Foods Act*, any dairyman against whom proceedings were taken by the Board of Health for selling milk below the standard, was prosecuted for adulteration, an offence which, in the public mind, naturally implied a serious degree of moral turpitude. As it was universally admitted that a deficiency of butter-fat (whatever might be the case in regard to solids not fat) might be due to causes which implied no dishonesty at all on the part of the producer, and could not always be avoided even by the use of reasonable care, the Commission thought that the branding of a dairyman, found guilty of this offence, as necessarily being an adulterator was a grave injustice. The speaker said that he had noticed that milks containing lower percentages of solids-not-fats,

were found in New South Wales. Occasionally the mixed milk from a number of cows was below the legal standard. Very few analyses were available in Australia, although the various States had established agricultural departments many years ago. He would have expected that the standards under *Pure Foods Acts* would have been based on analyses of the milks of Australian cows. Dr. Wardlaw had shown that, in a herd of selected cows housed and fed under excellent conditions, 40% of the milks fell below the standard for solids-not-fats. The cows in New South Wales evidently refused to conform to the legal standard. He was not in a position to say whether the standard should be altered, but he hoped that no dairymen would be punished for adulterating their milks with water, when the defect was in the cow. These milks with a percentage of solids-not-fats of less than 8.5%, contained about 5% fats, so that their nutritive value was high. They yielded at least 50% more nutritive material than milk of the composition of the legal standard.

Miss E. C. Pinkerton read a paper on "The Composition of Expired Alveolar Air." In a previous communication she had shown that the amount of carbon dioxide in the last 600 c.cm. expired air leaving the air-passages in a deep expiration, did not vary beyond the error of the analysis when the expiration was made within two seconds for quantities of two litres and over, and within one second for quantities of one to two litres. The investigation had been extended to the estimation of the percentage of oxygen as well as carbon dioxide and more accurate methods of analysis had been employed. Whereas the carbon dioxide could be determined in the previous research to 0.2% in a measurement of 5%, in the extended study the analyses were made in Haldane's large apparatus, and differences of 0.04% could be ascertained in an estimation of carbon dioxide of 5%. The samples had been collected in the same way as before by the subject breathing into a long brass tube. Samples of air were taken for analysis at intervals along the tube. The results of these analyses showed that there was a slight fall in the percentage of oxygen and a small increase in the amount of carbon dioxide the later the air left the mouth. These changes in the percentages of the gases varied in different respirations, but the maximal difference observed was 0.36% in the case of oxygen and 0.22% in that of carbon dioxide in the last 600 c.cm. expired air. In 17 out of 32 experiments the differences were less than half of these figures. The differences were independent of the volume of the expiration, but depended on the speed with which the expiration was made, increasing with the time taken for the air to leave the lungs.

In the method employed in her investigation the analyses were made on successive portions of the same respiration. Haldane had measured the amounts of carbon dioxide in the last portion of the air expired during a series of breaths of increasing depths. From his results he had concluded that the deeper part of an expiration contained no more carbon dioxide than the middle part. His method of analysis had been quite accurate enough to detect the changes in composition, but the fact that he had obtained his samples at various depths of respiration from different breaths, had not enabled him to recognize small differences in concentration. Her results supported the contention put forward by Lindhard, that the final portion of the expired air had not the same composition as the air in the lungs, but contained a higher percentage of oxygen and a lower percentage of carbon dioxide.

Correspondence.

ELIGIBILITY FOR MILITARY SERVICE.

December 17, 1917.

Sir,—On reading my *British Medical Journal*, I notice that a large number of the advertisements of appointments, etc., vacant contain the magic words "ineligible for military service."

I have never seen an advertisement of a medical appointment in Australia making the same condition. I know of many cases where the applicants who had military service

to their credit, have been passed over and the job given to those who never served.

It is about time the B.M.A. took a hand in this game.

Yours, etc.,

OBSERVER.

[We heartily endorse the opinion of our correspondent. Under the system of compulsory enrolment of the members of the medical profession for military service, only those who are not physically fit for service abroad would be permitted to accept civil appointments.]

FORBES WINSLOW MEMORIAL HOSPITAL.

Sir,—The British Ministry of Pensions has recognized and authorized for trial psychical treatment for soldiers suffering from shell-shock and nervous breakdown. It cannot be too widely known that this is exactly the treatment practised at the British Hospital for Mental Disorders and Nervous Diseases, 72 Camden Road, London, N.W.1., England, for over a quarter of a century. The Hospital has given effective and permanent relief gratuitously to thousands of men, women and children. The war has obviously increased the number of cases suffering from shell-shock and nervous breakdown to a marked extent, and the Hospital is at present appealing for additional funds to cope with the position, and also with the object of sending patients into the country, so necessary for their speedy recovery.

Will our colonial friends help us?

Donations, however small, will be greatly appreciated, and may be sent to me or the Secretary, Mr. F. J. Lee-Smith, 72 Camden Road, London, N.W.1., England.

Yours, etc.,

MARGARET FORBES WINSLOW.

The British Hospital for Mental Disorders
and Nervous Diseases,

72 Camden Road, London, N.W.,

October 29, 1917.

AUSTRALIAN ARMY MEDICAL CORPS COMFORTS FUND.

Noël is approaching, and with it a period of generous giving. There must be many who can spare a small amount for an excellent cause. Please send something in aid of the Army Medical Corps Comforts Fund.

	£	s.	d.
Amount previously acknowledged	113	14	0
Anonymous	1	1	0
Dr. C. St. Leger Willis (Milton, N.S.W.)	1	1	0

Obituary.

WILLIAM WESTON HEARNE.

Their Majesties the King and Queen of England and His Excellency the Governor-General have conveyed a message of condolence to Mrs. Hearne, on the receipt of the news of the death of her husband, Colonel William Weston Hearne, D.S.O. He was killed in France on October 17, 1917, after a distinguished and eminently useful period of service.

William Weston Hearne was born at Bega, New South Wales, on February 7, 1871. He received his schooling at the Geelong College in Victoria, and studied medicine at the Melbourne University. He was 23 years of age when he received his degree in medicine, and a year older when he took his degree in surgery. In September, 1898, he was appointed Resident Medical Officer at the Alfred Hospital, a position which he held for 16 months. Shortly after leaving the Hospital, he served as a medical officer in the Boer War, and was wounded in the shoulder. It is stated that a bullet passed through his lung. After a convalescence, he returned to Victoria and started in practice in South Melbourne, where he acquired the practice of the late Dr. Ford. During the following 13 years he was engaged in a very busy private and hospital practice, gaining the high esteem of all with whom he came into contact for his unvarying courtesy and devotion to his work. In the year 1906 he took the degree of doctor of medicine. In 1902 he was appointed Anaesthetist at

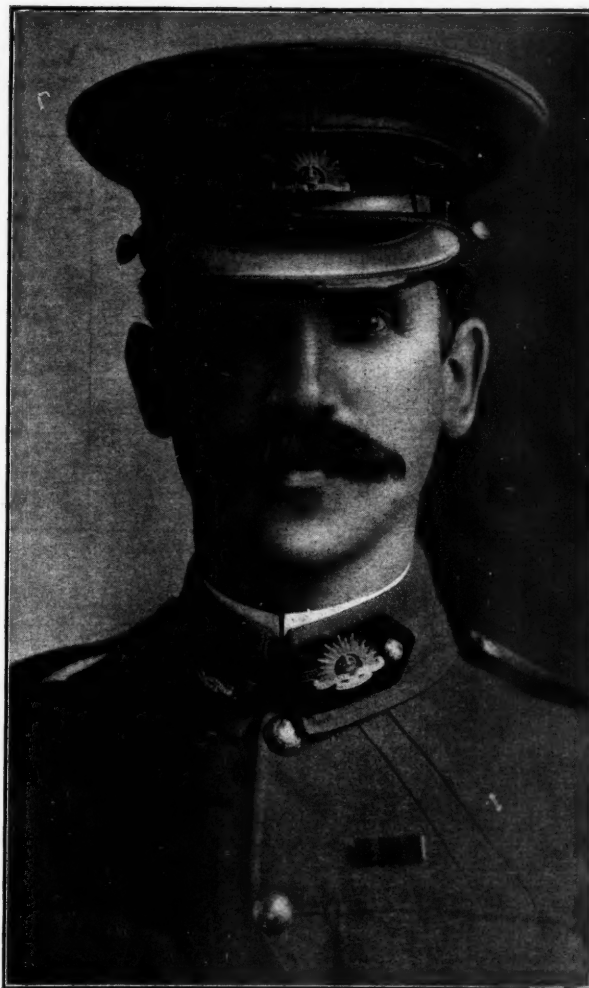
his old Hospital, the Alfred, and eight years later he was created an Honorary Physician to the Children's Department of the same Institution. When this Department was merged into the Hospital proper and the work was no longer conducted by special honorary physicians and surgeons, he became Physician to the Out-patient Department. In December, 1912, he was gazetted a Major in the Australian Army Medical Corps, and on September 20, 1914, he was transferred to the Australian Expeditionary Force. He left the country on October 14 as Major attached to the Second Field Ambulance. In Egypt and at Gallipoli he saw service, but was ill in hospital at the time of the evacuation. On July 26, 1915, he was promoted to the rank of Lieutenant-Colonel, and was sent with the Fifth Australian Division to France. Soon after his arrival in France he was appointed Assistant Director of Medical Services. On November 20, 1916, he was promoted to the rank of temporary Colonel. He received the decoration of the Distinguished Service Order from His Majesty on August 29, 1917. In a recent issue of the Journal it was recorded that he had been the recipient of the Italian Order of Chevalier of St. Maurice and St. Lazarus from King Emanuel. During the Boer war he obtained the South African (Queen's) Medal with two clasps.

It is said of him that he refused to recognize danger and, while solicitous of the safety and comfort of others, exposed his own life in an almost reckless manner. The following extract from one of the last letters written to his wife is characteristic of the man: "If I can see a decent chance of getting home by Christmas, I shall do so, but I can scarcely ask to go at present. There is so much in the wind. A period arrives in war when it becomes a question of endurance, and the team that can stick it out longest, wins, and you don't like to be the one to drop out and leave your share of the burden to be carried by those who remain."

Those who served under William Weston Hearne, like those who worked with him in the placid surroundings of civil practice, recognized his undoubted professional ability, his sound judgement and his intuitive grasp of the situation. They not only respected and admired the physician, they had a profound admiration for the man. An impressive memorial service was held on November 25, 1917, at St. Luke's Church of England, in South Melbourne. The sadness which filled the hearts of those present is felt by a very large number who were unable to attend to pay their last respects to a brave man.

WALTER FOWLER.

The death of Walter Fowler, of Bendigo, Victoria, took place on July 26, 1917. He was the son of the late Dr. Robert Fowler, who practised in the city of London and in the West End. He was born in the year 1858. When about 18 years of age he gained the Tancred Scholarship and joined Caius College, Cambridge. He spent three years at Cambridge, taking his degree in Arts. He then joined Guy's Hospital in London, and in the year 1884 took his L.S.A. and F.R.C.S. of England. Later, he obtained the Batchelor of Medicine, Batchelor of Surgery, Batchelor of Science and Master of Arts at Cambridge. Immediately after qualifying he became House Surgeon at Guy's Hospital. In 1885 he commenced practice in Birmingham, and was appointed Surgeon to the Out-patient's Department at the Queen's Hospital. The following year his father died. He left Birmingham to continue the city practice, and after a short time moved from Bishopsgate Street to Finsbury Pavement. He obtained, about this time, an out-door appointment at the Central London Throat and Nose Hospital under Lennox Browne. A few years later, signs of the illness, which ultimately led to his death, appeared. As he derived but little benefit from a trip to Egypt he migrated in 1891 to Australia with his wife and two young children, and settled in Echuca in Victoria. He spent nine years in private practice. About the year 1900 he accepted the appointment of Resident Medical Officer at the Bendigo Hospital, an institution with a large surgical "turn-over," for which he was entirely responsible. As a result, he became one of the leading provincial surgeons of Victoria. When ill-health forced him to retire in 1912, he was greatly missed as a kindly and efficient administrator. His death will be much regretted, not only by



his many Australian friends, but also in England by his relatives, his sometime fellow students and hospital colleagues, and by the Worshipful Company of Dyers, to which he belonged. He married Alice M. Wachter, of Hern, Kent, in 1887. She, with a family of two sons and one daughter, remain to mourn his loss.

Books Received.

COLLECTED PAPERS ON ANALYTICAL PSYCHOLOGY, by C. G. Jung, M.D., LL.D.; Authorized Translation, Second Edition; edited by Dr. Constance E. Long; 1917. London: Baillière, Tindall & Cox. Demy 8vo., pp. 462, with illustrations. Price, 15s. net.

PRACTICAL GUIDE TO DISEASES OF THE THROAT, NOSE, AND EAR, for Sealer Students and Junior Practitioners, by William Lamb, M.B., C.M., Edin., M.R.C.P.; Fourth Edition, 1917. London: Baillière, Tindall & Cox. Crown 8vo., pp. 372, with illustrations. Price, 8s. 6d. net.

INSANITY in EVERY-DAY PRACTICE, by E. G. Younger, M.D., M.R.C.P., D.P.H., etc.; Fourth Edition, 1917. London: Baillière, Tindall & Cox. Crown 8vo., pp. 134. Price, 5s. net.

THE PRACTICAL MEDICINE SERIES, under the general editorial charge of Charles L. Mix, A.M., M.D.; Volume VI., GENERAL MEDICINE; edited by Frank Billings, M.D., M.D., assisted by Burrell O. Raulston; 1917 Series. Chicago: The Year Book Publishers. Melbourne: Stirling & Co. Crown 8vo., pp. 347; illustrated. Price, 7s.

TROUBLES MENTAUX DE GUERRE, by John Léauté; Collection Horizon; Précis de Médecine et de Chirurgie de Guerre; 1917. Paris: Masson et Cie. Crown 8vo., pp. 203. Price, 4 fr.

ELECTRODIAGNOSTIC DE GUERRE, Clinique-Consell de Réforme. Technique et Interpretation, by A. Zimmern and Pierre Perol; Collection Horizon; Précis de Médecine et de Chirurgie de Guerre; 1917. Paris: Masson et Cie. Crown 8vo., pp. 152, with illustrations. Price, 4 fr.

Proceedings of the Australian Medical Boards.

NEW SOUTH WALES.

The following have been registered as duly qualified practitioners under the provisions of "The Medical Act, 1912 and 1915":—

Biggs, Frank Eric Raymond, M.B., Mast. Surg., 1917, Univ. Sydney.

Bourke, James Joseph Fitzgerald, Lic., Lic. Mid., 1897, R.C.P., Ireland; Lic., Lic. Mid., 1897, R.C.S., Ireland.

Additional Registration.

Hope, Alfred Joseph, Mast. Surg., 1917, Univ. Sydney.

QUEENSLAND.

The undermentioned gentleman has been registered, under the provisions of "The Medical Act of 1867," as a duly qualified medical practitioner:—

Fullard, John, Selwyn, L.S.A., Lond. 1887, M.R.C.S., Eng. 1888.

Medical Appointments Vacant, etc.

For announcements of medical appointments vacant, assistants, locum tenentes sought, etc., see "Advertiser," page xv.

Commonwealth Serum Laboratories, Biochemist, Senior Bacteriological Technical Assistant, and Bacteriological Technical Assistant.

Department of Public Instruction, New South Wales, Medical Officers, two men and two women, and one medical officer for inspection and ophthalmic work in the country.

Laboratory of Microbiology and Pathology, Brisbane, Micro-biologist and Director.

Newcastle Hospital, Junior Resident Medical Officer.

Medical Appointments.

IMPORTANT NOTICE.

Medical practitioners are requested not to apply for any appointment referred to in the following table, without having first communicated with the Honorary Secretary of the Branch named in the first column, or with the Medical Secretary of the British Medical Association, 429 Strand, London, W.C.

Branch.	APPOINTMENTS.
VICTORIA. (Hon. Sec., Medical Society Hall, East Melbourne.)	Brunswick Medical Institute. Bendigo Medical Institute. Prahran United F.S. Dispensary. Australian Prudential Association Proprietary, Limited. National Provident Association. Life Insurance Company of Australia, Limited. Mutual National Provident Club.

Branch.	APPOINTMENTS.
QUEENSLAND. (Hon. Sec., B.M.A. Building, Adelaide Street, Brisbane.)	Medical Officers to the Selwyn Hospital, North Queensland. Brisbane United Friendly Society Institute.
SOUTH AUSTRALIA. (Hon. Sec., 3 North Terrace, Adelaide.)	The F.S. Medical Assoc., Incorp., Adelaide. Contract Practice, Appointments at Renmark.
WESTERN AUSTRALIA. (Hon. Sec., Health Department, Perth.)	All Contract Practice Appointments in Western Australia.
NEW SOUTH WALES. (Hon. Sec., 30-34 Elizabeth Street, Sydney.)	Australian Natives' Association. Balmain United F.S. Dispensary. Canterbury United F.S. Dispensary. Leichhardt and Petersham Dispensary. M.U. Oddfellows' Med. Inst., Elizabeth Street, Sydney. Marrickville United F.S. Dispensary. N.S.W. Ambulance Association and Transport Brigade. North Sydney United F.S. People's Prudential Benefit Society. Phoenix Mutual Provident Society. F.S. Lodges at Casino. F.S. Lodges at Lithgow. F.S. Lodges at Parramatta, Penrith, Auburn and Lidcombe. Newcastle Collieries — Killingworth, Seaham Nos. 1 and 2, West Wallsend.
TASMANIA. (Hon. Sec., Belgrave, Tasmania.)	Medical Officers in all State-aided Hospitals in Tasmania.
NEW ZEALAND: WELLINGTON DIVISION. (Hon. Sec., Wellington.)	Friendly Society Lodges, Wellington, N.Z.

Diary for the Month.

- Jan. 8.—N.S.W. Branch, B.M.A., Council (Quarterly).
 Jan. 15.—Tas. Branch, B.M.A., Council and Annual Meeting.
 Jan. 15.—N.S.W. Branch, B.M.A., Ethics Committee.
 Jan. 17.—Vic. Branch, B.M.A., Council.
 Jan. 18.—Queensland Branch, B.M.A., Council.
 Jan. 22.—N.S.W. Branch, B.M.A., Executive and Finance Committee.
 Jan. 29.—N.S.W. Branch, B.M.A., Medical Politics Committee; Organization and Science Committee.
 Jan. 30.—Vic. Branch, B.M.A., Council.

EDITORIAL NOTICES.

Manuscripts forwarded to the office of this Journal cannot under any circumstances be returned.

Original articles forwarded for publication are understood to be offered to *The Medical Journal of Australia* alone, unless the contrary be stated.

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